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# Uttering evidentials without evidence

Diti Bhadra

Epistemic modals are uncontroversially assumed to have an inherent evidential component of NON-DIRECT evidence (von Fintel and Gillies 2010, a.o.). This assumption entails the following: (i) epistemic modals should be infelicitous in evidence-neutral contexts, (ii) and they should be infelicitous in contexts with DIRECT perceptual evidence (including trustworthy reports). This paper will engage with the first prediction, and provide empirical basis for the claim that epistemic modals *can* and *do* appear in certain neutral contexts cross-linguistically. An analysis is provided centered around the epistemic modal base, where an additional ordering source is shown to yield non-evidential readings of epistemic modals, thus arguing that discourse goals can affect formal representations of modality.

## 1. Introduction

It is considered to be a robust cross-linguistic generalization that epistemic modals in the world's languages have a restriction of NON-DIRECT evidence (Westmoreland 1995, 1998, Faller 2002, von Fintel & Gillies 2007, 2010, Matthewson et al. 2007). For example, consider the following modalized statement:

(1) John **must** be home right now.

The use of the modal *must* (in its epistemic use - the only reading we are concerned with here) would signify to the hearer that the speaker is somehow *inferring* the proposition 'John is home right now' from certain relevant cues in the context. For example, the speaker could be driving past John's house, sees his lights on, and knowing that John is conscientious about saving energy, could infer quite confidently that John is home at the moment because his lights are on. Let us call this the INFERENCE reading (IR) of an epistemic modal. Notice that the same modal becomes infelicitous in the following context:

- (2) *Mary is driving past John's house, and sees him standing in the doorway talking to a friend. Mary says:*

#John **must** be home right now.

The context in (2) is a DIRECT evidence context (see Willett 1988's full taxonomy of evidence types). Willett's taxonomy was one of the first of many comprehensive survey studies in evidentiality (see De Haan 2001, Aikhenvald 2004, Davis et al. 2007, Faller 2002, McCready & Ogata 2007, Rooryck 2001a, 2001b, Matthewson et al. 2007, among others).

The DIRECT evidence in this context is the fact that the speaker is informed by one of her own direct senses of perception (vision) that John is in his house. In contrast, in a scenario of INFERENTIAL evidence as discussed under (1), the modal use is perfectly felicitous. Given this strict restriction of INFERENTIAL evidence, (von Stechow & Gillies 2010:4) place epistemic modals under Indirect evidence in Willett's taxonomy of evidence types - comprising Inference from Results and Reasoning <sup>1</sup>.

Another context where epistemic modals are infelicitous is when the speaker *does not have any evidence* regarding a  $p$  or  $\neg p$ . Such contexts will be called 'evidence-neutral' or 'neutral' in this paper. The speaker does not have sufficient grounds to make an inference about either  $p$  or its complement. For example, in the context below, the epistemic use of *must* is infelicitous in assertions of either polarity:

- (3) *Mary and John are co-workers. John left the office an hour ago without telling anyone where he's headed. Sally is now asking Mary where John is. Mary says:*

#John **must** be home right now.

#John **must not** be home right now.

Note that a non-modalized claim (*John is home right now*) has the exact opposite distribution of its modalized counterpart. It can only be uttered when the speaker *has* DIRECT perceptual evidence that John is home, and cannot be uttered when the available evidence is only inference OR in an evidence-neutral context. These facts surrounding the felicity of epistemic modals <sup>2</sup> as mediated by the inherent evidential component hold cross-linguistically.

This paper presents data from Bangla (also known as Bengali; Indo-Aryan, SOV) to make the claim that *epistemic modals can appear in certain neutral contexts*. In general, Bangla epistemic modals have the same properties discussed so far. Crucially, however, they can also appear in contexts such as the following:

- (4) *Raj is a soldier in the army. His whereabouts are completely unknown, and there has been no news from him in a very long time. Mina is trying to reassure his distressed mother by saying:*

a. *Dekhben, Raj shiggiri bari phire ashbe nishchoi*  
 you-will-see, Raj soon home return.IMPV come.3P.FUT surely/must  
 'Don't worry, I am sure Raj will come home soon.'

<sup>1</sup>The use of small caps for denoting type of evidentiality throughout this paper is in keeping with the conventions in the evidential literature post-Willett's taxonomy.

<sup>2</sup>Although only examples with *must* have been provided so far, the same facts hold for possibility modals such as *might* as well as other necessity modals such as *should*.

In this case, the speaker Mina has no evidence either way, but still uses the epistemic necessity modal *nishchoi* ‘surely/must’. As far as labels go, let us call this the REDUCTIVE reading (RR) of the modal (for reasons that will be clear in the following sections).

Showing the contrast between the properties of *must* and *nishchoi* is the main goal of examples (3) and (4). Crucially, both being epistemic modals, they share one property in common - they both encode INDIRECT evidence, and are infelicitous in the face of DIRECT evidence. Their crucial difference lies in the fact, however, that *nishchoi* can appear in evidence-neutral contexts such as (4). To make the point clearer, let’s try to use *must* in the same context. The result is infelicity, as shown below. The RR is unavailable, and at best the addressee might get an INFERENTIAL reading, which would be quite weird in this situation where no one has any evidence:

- (5) *Raj is a soldier in the army. His whereabouts are completely unknown, and there has been no news from him in a very long time. Mina is trying to reassure his distressed mother by saying:*  
#‘Don’t worry, Raj must be coming home soon.’

The main aims of this paper are to provide evidence for the claim that the REDUCTIVE is an universal or at least a very common phenomenon cross-linguistically, and to provide an analysis of how to derive the semantics of this alternative reading within a standard framework of modal semantics. The paper is organized as follows: Section 2 discusses some crucial properties of the REDUCTIVE construction, including its reduced meaning and its correlation with tense. Section 3 presents a formal framework of epistemic modality and places *nishchoi* within it. Section 4 presents a semantic analysis of REDUCTIVE *nishchoi* and a pragmatic account of the incompatibility with the past. Section 5 discusses residual issues and Section 6 concludes.

## 2. The nature of the REDUCTIVE construction

As we saw above, in an evidence-neutral construction, it appears that the only felicitous use of an epistemic necessity modal is in the RR. Let us examine the construction a bit further.

### 2.1. Reduced meaning

Firstly, one of the main hypotheses that this paper will pursue is that this reading should be available under the right conditions in all languages that have epistemic modals. To this end, we provide examples from English, Hindi and Japanese<sup>3</sup> below where the respective modals have the RR only. In the same context as provided in (4):

- (6) a. ‘Don’t worry, Raj will **definitely/probably** come home soon.’ ENGLISH  
 b. *Chinta mat karo, Raj zaroor ghar wapas aayega*  
 worry not do, Raj must/surely home return come.MASC.FUT.  
 ‘Don’t worry, Raj will surely come home soon.’ HINDI

<sup>3</sup>Thanks to an anonymous reviewer of one of my abstracts for the example.

- c. *Raj-wa kitto kaettekuru yo*  
Raj.TOP surely come.back particle

‘Don’t worry, Raj will surely come home soon.’

JAPANESE

In all of these examples, the available interpretation is a somewhat ‘bleached’ one - ‘I have no evidence for *p* but I will use a necessity modal anyway to reassure/comfort you’. It is this *reduced* meaning, in a sense, that led to its label. Crucially, note that the presence of the RR entails the absence of the IR. In other words, the examples above cannot have the interpretation - ‘I made an inference about *p* given some contextual clues or from my previous knowledge about related facts’. This points to a complementary distribution between reassurance and inference. Thus, in a context where the speaker has inferential evidence that he wants to use to reassure the hearer - for example, *R sees M looking up flight tickets to Delhi, and wants to reassure M’s mother, who lives in Delhi, that her son will visit her soon* - only the IR or the RR would be possible, not both.

Given our observation that a special theme of *reassurance of the hearer* appears to be present in these evidence-neutral epistemic usages, I claim that the RR exists to fulfill a special *conversational goal* of the speaker. This claim will be an important piece in the analysis of *nishchoi* sketched in Section 4.

In the typology of conversational goals (see Halliday 1978, Hobbs & Evans 1980, Cheepen 1988, Todman & Alm 1997, 2003) there are two broad categories of implicit and explicit goals people pursue in conversation - transactional/ideational goals and interactional/interpersonal goals. The former are concerned with “getting things done”, i.e. evolving plans, engaging in a task, while the latter predominate when the focus is on the social aspects of the conversation itself. Our conversational goal of reassurance would fall under the interactional/social category, where the utterance content is ‘listener-oriented’ (Bernsen 2001). Todman & Alm (2003) argue that in social chat, which is guided by interpersonal, listener-oriented goals, the precision of the message itself is often less important than its *delivery* and *timeliness*. Such a characterization seems to accurately describe the contexts in which the RR is felicitous. A distressed hearer is seeking comfort, and therefore the accuracy of the message *Your son will definitely come back home from war* is less important than the timely delivery of it in the conversation. This holds even when the speaker has no real grounds for that utterance.

## 2.2. Correlation with tense

The availability of the RR has an interesting interaction with tense, in that it is available only in the *non-past tenses*. The example contexts we have seen so far have been in the *future tense*. The RR can also be obtained in the *present tense* but never in the *past tense*. The Bangla examples with present tense (7a) and past tense (8a) below bring out this contrast:

- (7) *Mina is complaining to Raj, who has never met her son Shyam before, that her son’s exam is today and she’s worried that he’s out playing hookie somewhere. Raj says to her:*

- a. *Porikkhar halle dekhun giye, Shyam nishchoi boshe mon*  
 exam hall.LOC see.2P.HON.PRES go.IMPV, Shyam surely/must sit mind  
*diye porikkha dicche*  
 give.IMPV exam give.3P.PRES

Lit. ‘(Don’t worry), go see in the exam hall, I am sure Shyam is writing his exam seriously.’

- (8) *Yesterday, Mina’s son Shyam visited the town where his grandmother lives. Mina is worried that he didn’t visit his grandmother, who was waiting to see him. Sita is reassuring Mina:*

- a. *#Chinta korona, Shyam nishchoi or dida’r sathe dekha*  
 worry do.2P.NEG, Shyam surely/must his grandmother.GEN with meet  
*koreche giye*  
 do.3P.PASTPRF go.IMPV

Intended: ‘Don’t worry, I am sure Shyam met his grandmother.’

The past tense context in (8a) is a neutral context that locates the time of the event in the past. It yields infelicity because of two reasons: (i) the RR, a usage based on reassuring or comforting the speaker, is somehow not allowed access into events that have already taken place, and (ii) the IR is not available in this neutral context anyway, given its strict evidential restriction common to all epistemic modals - only contexts supporting inference of *p* allow [modal *p*]. The incompatibility with the past in (i) will be shown to exist due to a Gricean *generalized implicature* arising out the nature of the ordering source of the modal, in Section 4.2.

Thus, we have narrowed down the exact conditions for the birth of the RR:

- evidence-neutral context for the speaker.
- non-past tense construction.
- conversational goal of the speaker - *reassure the speaker*.

Before moving on to the main aim of providing an analysis that captures all these facts, let us review the system of formalization of the evidential restriction of epistemic modals that we will work with in this paper.

### 3. The semantics of epistemic modals

#### 3.1. von Fintel and Gillies (2010)

The von Fintel & Gillies (2010) system refines the basic framework proposed in Kratzer (1981, 1991) with a focus on formalizing the evidential restriction of epistemic modals.

This combination makes their account the first in the modality literature to provide a dual characterization of the semantics of epistemic modals, which is the reason it is our preferred system in this paper. The authors argue for a *hard-wiring* of the evidential signal in the meaning of *must*. This hard-wiring approach could take two possible routes: (i) the evidential signal is a *presupposition*, (ii) the evidential signal is a *conventional implicature* (à la Potts 2005). The authors argue for the first route over the second given the fact that epistemic *must* contributes to both the ‘at-issue’ and ‘not-at-issue’ dimensions of meaning (as opposed to conventional implicatures which only contribute to the ‘not-at-issue’ dimension). The epistemic necessity expressed through standard possible world semantics (Kratzer 1981, a.o.) is the at-issue contribution, while the evidential signal is the not-at-issue contribution.

In such a system, the formalization of the evidential component relies on a structured model of information states (that is analogous to certain models in the literature on belief dynamics). There are two kinds of information states:

- (9) a. Direct trustworthy evidence, either acquired by direct observation via the senses of perception or via trustworthy reports. The label given to this is the *kernel*.
- b. Inferential conclusions that are compatible with, and thus follow from, the kernel.

The evidential restriction is a presupposition stating that the question of *whether p* has not been *settled* by the direct evidence (or the kernel) in the context. Crucially then, the evidential signal of an epistemic modal is a signal of *indirectness*, and not of weakness (contra Karttunen 1972, Groenendijk & Stokhof 1975, Kratzer 1991, among many others). However, the main innovation in the mapping of this indirectness of evidence lies in the authors defining what is DIRECT evidence, instead to trying to define the quagmire of all that could possibly come under INDIRECT evidence. This is where the idea of the kernel comes in.

A *kernel K* is a finite, non-logically closed set of propositions that are known to be true via the speaker’s direct perception or trustworthy reports. The propositions contained in this set are considered to be *directly settled* by the kernel.

- (10) **Kernels and Bases:**  $K$  is a kernel for the modal base  $B_K$ ;  $B_K$  is determined by the kernel  $K$  iff:
  - a.  $K$  is a set of propositions (if  $P \in K$  then  $P \subseteq W$ )
  - b.  $B_K = \bigcap K$

(von Fintel & Gillies 2010:p. 25)

The idea is that since we cannot have direct information that  $P$  unless it is the case that  $P$ , so for a modal uttered at  $w$ , with respect to a kernel  $K$ , we know that  $w \in K$ . So our modal bases will be reflexive. Given this set-up, and if  $K_0 = \emptyset$  is considered as the minimal kernel, then in a situation when we have no direct information,  $B_{K_0} = W$ , i.e. we have no information at all.

von Fintel and Gillies treat the evidential signal as a presupposition that needs to be satisfied for the purposes of well-definedness. The definition given of epistemic modal (demonstrated with *must*) is the following:

(11) **Definition** (Strong *must* + Evidentiality). Fix a *c*-relevant kernel *K*:

- a.  $\llbracket \text{must}\phi \rrbracket^{c,w}$  is defined only if *K* does not directly settle  $\llbracket \phi \rrbracket^c$
- b.  $\llbracket \text{must}\phi \rrbracket^{c,w} = 1$  iff  $B_K \subseteq \llbracket \phi \rrbracket^c$  (von Fintel & Gillies 2010:26)

The intuition here is that even if *K* fails to *settle* whether *p*, it can still *entail* whether *p*. As von Fintel and Gillies demonstrate - epistemic modals exploit this gap. I provide the diagrammatic representation below to capture this insightful understanding of epistemic modals, which includes their restriction of indirect evidence:

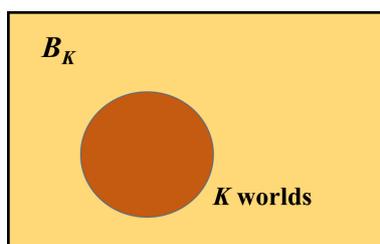


Figure 1:  $B_K = \bigcap K$

### 3.2. *Nishchoi*

I adopt the von Fintel and Gillies framework for to provide an analysis of *nishchoi*, as given below:

(12) For a *c*-relevant kernel *K*:

- a.  $\llbracket \text{nishchoi } \phi \rrbracket^{c,w}$  is defined only if *K* does not directly settle  $\llbracket \phi \rrbracket^c$
- b.  $\llbracket \text{nishchoi } \phi \rrbracket^{c,w} = 1$  iff  $B_K \subseteq \llbracket \phi \rrbracket^c$

We see, therefore, that the prejacent of *nishchoi* is entailed by the kernel, but not directly settled by it. For explication, let us consider the following piece of Bangla data:

(13) *As John, Mary and Sue were leaving the house, John asked Mary to leave their house keys with the neighbor, and NOT the caretaker. However, on returning home, John and Sue see Mary calling up the caretaker. Sue says to John:*

- a. *Cabita nishchoi kyartakerer kache rekhe esheche!*  
key.CL surely/must caretaker.GEN near keep.IMPV come.3P.PASTPRF  
'(She) must have left the keys with the caretaker!'

In this case, we can imagine Sue's kernel consisting of propositions such as *John asked Mary to leave the keys with the caretaker, John asked Mary not to leave the keys with the neighbor, Mary is dialing the number of the caretaker right now while we are standing waiting to get into*

*the apartment, Mary is not dialing the number of the neighbor, etc.* Based on these propositions for which Sue has direct perceptual evidence, she makes a valid inference that the keys must be with the caretaker and not the neighbor and thus felicitously uses *nishchoi* in the construction. Note that the kernel does not *directly settle* the question of who the keys were given to, (i.e. Sue does not have direct perceptual evidence that Mary handed the keys over to the caretaker) but *does entail* the prejacent of the modal. Thus, the inference belongs in the epistemic modal base by the principle in (10):  $B_K = \bigcap K$ .

Why is the IR unavailable in evidence-neutral contexts in the world's languages? To be able to formulate the answer to that question, the context in (13) is tweaked to turn it into a neutral context:

(14) *John and Mary live together, and they are meeting their friend Sue directly at the movies. While leaving, John asked Mary to leave their keys with the neighbor and NOT the caretaker. After the movie, Sue comes back to their apartment with them, and they see Mary dial the caretaker's number. Sue says to John:*

- a. #*Cabita nishchoi kyartakerer kache rekhe esheche!*  
 key.CL surely/must caretaker.GEN near keep.IMPV come.3P.PASTPRF  
 Intended: '(She) must have left the keys with the caretaker!'

In this case, Sue's kernel can imaginably consist of propositions such as *Mary is dialing the caretaker's number, Neither John nor Mary are taking out keys to open the door*, among other obvious contextual and pragmatic information. Given that her kernel has no direct information about the history of the keys, she cannot make the inference in (14), yielding infelicity. In other words, given her *privileged information* (the kernel), the resultant epistemic modal base does not support the prejacent *Mary left the keys with the caretaker*.

In this system, then, we see that the interpretation of the epistemic modal base is dependent on the mapping of the epistemic modal base which in turn is dependent on the contextually defined kernel. Cross-linguistically, the evidential restriction of inference results from the prejacent of the modal being compatible with (entailed by) the kernel, while crucially being *outside* the kernel (not directly settled by it).

#### 4. Semantics of REDUCTIVE *nishchoi*

##### 4.1. Deriving the reading

In the standard Kratzerian framework (Kratzer 1981, 1991), different flavors of modality (epistemic, goal-oriented, deontic, etc.) are achieved via the interplay and contextual resolution of two conversational backgrounds - a modal base and an ordering source. Ordering sources are typically understood as sets of propositions that help determine the position of a particular world on a scale of *favoured* or *best-ranked* worlds (see Kratzer 1981, 1991, von Stechow & Iatridou 2005, 2008 for different applications of the ordering source component).

An ordering source determines a partial order on a modal base such that a world  $w'$  comes closer to the ideal set up by  $g(w)$  than a world  $w''$  iff  $w'$  makes more ideal propositions true

than  $w''$  does. This paper will use this understanding of an ordering source to propose that the main mechanism to capture the RR is a simple additional restriction of an ordering source on the epistemic modal base. In this setup, the more of the ideal propositions fulfilling the speakers conversational goal of reassuring the hearer are made true by a world, the closer it is to the ideal. Given that the ordering source function  $g$  serves such a goal-oriented purpose, we will use the standard label of BOULETIC<sup>4</sup> (or BOULETIC<sub>conversationalgoals</sub> to be very specific) for the type of the ordering source. Adding this ordering source to the current semantics of *nishchoi* that we formulated in (12) provides us with the meaning of the REDUCTIVE *nishchoi*, shown in (15) below.

- (15) For a  $c$ -relevant kernel  $K$  and the modal base  $B_K$ :
- $\llbracket \textit{nishchoi } \phi \rrbracket^{c,w}$  is defined only if  $K$  does not directly settle  $\llbracket \phi \rrbracket^c$
  - $\llbracket \textit{nishchoi } \phi \rrbracket^{c,w} = 1$  iff  $B_K \subseteq \llbracket \phi \rrbracket^c$
  - $g(w) = \{p : p \text{ fulfills the speakers conversational goal of reassuring the hearer}\}$   
 $\forall w', w'' \in W : w' \leq_{g(w)} w''$  iff  $\{p \in g(w) : w'' \in p\} \subseteq \{p \in g(w) : w' \in p\}$

These ideal propositions that fulfill the speaker's conversational goal can be of the form - *soldiers come back from war even after long periods of being missing, the division of the army Minas son joined may not be directly at the warfront*, etc. The BOULETIC ordering source (BOS) picks out the worlds ranked highest by how many propositions the worlds make true that fulfill the speaker's conversational goals (as shown in Figure 2). The quantificational part of the modal (that we have kept intact as inherited from the Kratzerian framework) then comes into effect and quantifies over these worlds.

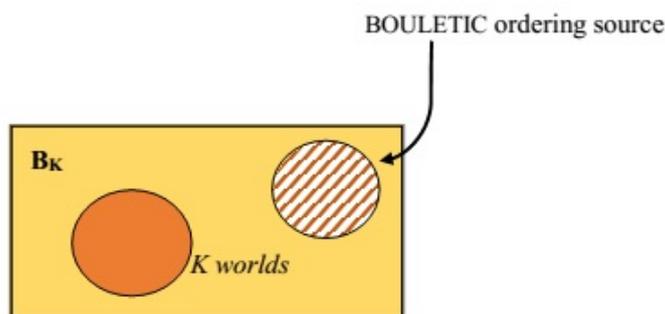


Figure 2: An Ordering Source Restriction introduced by discourse goals

This ordering source crucially **rules out the  $\neg\psi$  worlds from the modal base, because those violate the speaker's goals**. Thus, the speaker can get away with a REDUCTIVE *nishchoi* statement because: (i) the worlds picked out by the BOS still satisfy the presupposition of

<sup>4</sup>Kratzer (1981), a.o., subsumes TELEOLOGICAL into BOULETIC, while Portner (2007) a.o., makes a difference between the two. The terminology is not crucial here; we call it BOULETIC here since the *desire* of the speaker is to reassure the addressee.

*nishchoi*, i.e. these worlds make those propositions true which are not directly settled by the context; and (ii) the world of evaluation does not have to be among these worlds - making the REDUCTIVE statement true in the context. Thus, the speaker does not have to commit that the actual world is a world where Raj comes back home from war. The BOS, then, rules out  $\neg\psi$  worlds, helps the speaker fulfill her conversational goal of reassurance, as well as keep her claim **non-factive**. The result is an evidence-less, non-factive epistemic modal that is able to appear in neutral contexts.

The issue of non-factivity deserves some discussion here. In their formulation of a ‘strong’ semantics for *must*, von Fintel and Gillies (2007, 2010) go against the general strain in the epistemic literature (that claims *must* is *weak*) and ascribe *factivity* to *must*, whereby the modalized claim *must p* is argued to entail *p*. They present a series of cogent arguments in favor of the hypothesis that *a must statement is never weak*. It is just a signal of indirectness (in terms of its evidentiality) but it is never a signal of reduced strength of utterance or reduced speaker commitment or confidence. Some of their reasoning is provided below; I refer the reader to the original work for the complete discussion.

One of their first arguments is that if we were to assume that *must* is weak as the traditional literature on epistemic modals would have it, then *must  $\psi$*  should be perfectly compatible with *perhaps  $\neg\psi$*  which does not entail  *$\psi$* . This prediction, however, is not borne out, no matter what the order of the conjuncts is:

- (16) a. #It must be raining but perhaps it isn’t raining.  
b. #Perhaps it isn’t raining but it must be.

(von Fintel & Gillies 2010:p. 17)

These sentences turn out to be contradictions. The authors express their worry that in uttering a weaker *perhaps  $\neg\psi$*  claim, the speaker is not suggesting a reduction of the modal base whereby only  $\neg\psi$  worlds are being considered. Thus, if *must* had the same property of not entailing its prejacent like *perhaps not*, then *must* should be okay with this state of affairs. This, however, is not the case.

Another of their arguments is centered around the room for retraction in the usage of epistemic modals. While modals that are traditionally considered weak such as the existential *might* or the weak necessity modal *ought* allow the speaker felicitous opportunities to distance themselves from the truth of the prejacent when it turns out to be false, a strong necessity modal like *must* does not. For example, observe the contrast in the exchanges below:

- (17) a. John: It *might* be raining.  
b. Bill: [Opens curtains] No, it’s not! You’re wrong!  
c. John: Well, I only said that it *might* be, so technically I’m not wrong.

- (18) a. John: Chris *ought* to be mowing the lawn right now.  
b. Bill: [Opens curtains] No, he’s not! You’re wrong!  
c. John: Well, I only said that he *ought* to be, so technically I’m not wrong.

- (19) a. John: It *must* be raining.  
 b. Bill: [Opens curtains] No, it's not! You're wrong!  
 c. John: #Well, I only said that it *must* be, so technically I'm not wrong.

(Inspired by von Stechow & Gillies 2010:17-19)

The claim here is that from a strength approach to *must*, the pattern above is not surprising - combining *only* and *must* sounds as cringeworthy as saying *John only ate all of the cookies*. Under a view that positions *must* at the lower rungs of epistemic strength, the pattern of discord between *only* and *must* above is not predicted.

Coming back to the RR problem, we now understand the role of BOS in effecting non-factivity better. An INFERENTIAL *nishchoi* claim is factive, as we discussed above, assuming that, in the strength debate, the side of factive epistemic modals is more convincing. *In the IR case, the ordering source is empty* (à la Kratzer 1981, 1991). However, the REDUCTIVE version of the modal has the BOS. Even though it picks a set of worlds in which the speaker's discourse goal of reassurance is satisfied, the BOS *cannot* and *does not* ensure that the world of evaluation is in that set. Recall Figure 2 - the world of evaluation is in the modal base but outside both the circles (in the yellow section of the figure). This fact impairs the strength of the modal - *it is no longer factive*. This impairment is one of the crucial reasons why the epistemic necessity modal can be uttered even when the speaker has no (indirect) evidence for the prejacent.

At this juncture, one may ask a question regarding the nature of the modal base in the RR. If it is indeed an evidence-neutral context, then how and why are we still operating inside an epistemic modal base in deriving the evidence-less-ness of the RR? The answer to that lies in the *nature of the kernel in the two cases*. Given that communication occurs with utterances produced and understood by the discourse participants in relation to their doxastic domains, it is not surprising that even in the evidence-less case we would still be operating within a knowledge-centered *epistemic* modal base. Crucially, given that modal bases are formed by logical closure of the propositions in the kernel ( $B_K = \bigcap K$ ), *what is in the kernel determines the shape of the epistemic modal base*. In the RR case, the kernel does not contain any directly settled propositions that bear on the question of whether or not the prejacent holds; while in the IR case, there are crucial clues in the kernel to make the speaker *infer* that the prejacent must hold. This difference in the nature of the kernel gives yields two very different modal bases in the IR and RR cases, even though in both cases the modal base is still epistemic in nature.

The reader might have observed the presence of parenthetical elements such as *don't worry* in sentence-initial positions in several of the examples presented above. I included them because their presence makes the RR easier to get <sup>5</sup>. Consequently, I propose that these parentheticals like *don't worry*, and its Bangla counterparts such as *dekhben* 'you will see', *chinta korona* 'don't worry', etc. are *overt syntactic realizations* of the BOULETIC ordering source that imposes discourse requirements on the modal base. An uncontroversial prediction of this hypothesis would be that in all languages that allow modals with the RR, such overt parenthetical elements should help achieve the reading more easily than if they were covert/absent.

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<sup>5</sup>Intonation plays a somewhat productive role in getting the RR too, but a discussion of that in any detail is beyond the scope of this paper.

#### 4.2. *Incompatibility with the past*

This section will provide an explanation for the incompatibility between the RR and the past tense, as we saw in (8a). The main claim is that due to the nature of the ordering source, a Gricean Generalized Implicature arises that blocks co-occurrence of the RR with the past. Let us do a quick review of the implicature theory in Grice (1975) before we see how it applies to the problem at hand.

The cornerstone of Grice's pragmatic theory of human conversation are his maxims - the Cooperative Principle (a super maxim), and the Maxims of Quality, Quantity, (Relation) Relevance and Manner (see Lewis 1976, Joshi et al. 1984, Levinson 2000, Horn 1984, Wilson & Sperber 2004, Benz 2006 for different variants of the theory of maxims). A *conversational implicature* arises when the following three conditions are met.

- (20) A speaker who, by saying *p* has implicated that *q*, may be said to have *conversationally implicated* that *q* given that:
- a. he is presumed to be adhering to the conversational maxims and the cooperative principle;
  - b. the supposition that he has awareness of the fact that *q* is required in order to make his saying *p* is consistent with the presumption above;
  - c. the speaker thinks that it is upon the hearer to calculate that the supposition above is required.

(Grice 1975:49-50)

The guiding idea beside these definitive conditions is that the conversational implicature is an inference that the hearer in a conversation is *compelled* to make in order to continue to assume that the speaker is being cooperative <sup>6</sup>.

A *generalized implicature* is an important subclass of conversational implicatures. The following passage (Grice 1975:56) brings out the distinctions that Grice makes between particularized and generalized implicatures:

I have so far considered only cases of what I might call particularized conversational implicature that is to say, cases in which an implicature is carried by saying that *p* on a particular occasion in virtue of special features of the context, cases in which there is no room for the idea that an implicature of this sort is NORMALLY carried by saying that *p*. But there are cases of generalized conversational implicature. Sometimes one can say that the use of a certain form of words in an utterance would normally (in the ABSENCE of special circumstances) carry such-and-such an implicature or type of implicature. Noncontroversial examples are perhaps hard to find, since it is all too easy to treat a generalized conversational implicature as if it were a conventional implicature. I offer an example that I hope may be fairly noncontroversial.

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<sup>6</sup>see Hirschberg 1985 for problems with Grice's formulation and for a more fully specified version

In other words, generalized conversational implicatures are those that, in the absence of special contextual features, are carried by certain words *normally* in a sentence. Irrespective of context, Gricean Generalized Implicatures (GGIs) are present because they are associated with the specific forms of words being used in the utterance.

In this paper, I will use the GGI idea in making the following claim: In examples such as (8a), repeated below in (21a), there is a GGI of the form as specified in (22):

(21) *Yesterday, Mina's son Shyam visited the town where his grandmother lives. Mina is worried that he didn't visit his grandmother, who was waiting to see him. Sita is reassuring Mina:*

- a. #*Chinta korona, Shyam nishchoi or dida'r sathe dekha*  
 worry do.2P.NEG, Shyam surely/must his grandmother.GEN with meet  
*koreche giye*  
 do.3P.PASTPRF go.IMPV

Intended: 'Don't worry, I am sure Shyam met his grandmother.'

(22) **GGI: If an epistemic modal is used in talking about an event at a past time  $t$ , then at utterance time  $u$ , (where  $t < u$ ), the speaker has to have evidence or knowledge about the event that took place at  $t$ .**

Using *nishchoi* and a past event together, thus, results in the hearer assuming that the speaker has *actual inferential evidence for the prejacent*. This assumption yields the unavailability of the RR - the existent implicature of there being valid, conclusive inferences about past events blocks out a reading where the hearer calculates an inference that the speaker is just using the modal to reassure the hearer. And crucially, the IR is not available anyway because it is a context where the speaker actually has no evidence, and thus has made no inference about the prejacent.<sup>7</sup>

The assumption of possession of actual knowledge when an epistemic modal or evidential is used with past morphology is not uncommon in the world's languages. In Turkish, the past tense/past perfect is often a marker of DIRECT evidentiality, whereby using the past signals that there is complete or almost complete knowledge of the event on the part of the speaker. In the case of non-past events, this is not the case. Gül (2006) uses Plungian's (2001) categorization of 'Retrospective' evidence to classify the evidence-type denoted by the past tense marker *-mIs*, where *the evidentially marked situation is before the utterance time ( $p$  before  $T_0$ )*. The usage presupposes that the speaker has *direct access to knowledge about the event*. In their work on Tibetan evidentiality, de Villiers et al. (2009) report a similar situation for the Tibetan past tense marker *song*, whose usage signals the presence of direct evidence on the part of the speaker.

I claim that when combined with the past tense morphology, the use of *nishchoi* is no longer calculated as a reassuring strategy, because a strong flavor of speaker-inference is already present. This is the reason we have infelicity in *nishchoi*-past combination such as in (21a). It should be mentioned here that one should not take this to mean that the modal cannot appear with the past tense at all; in a context with INFERENCE evidence (i.e. *not* an evidence-neutral

<sup>7</sup>Note that, unsurprisingly, the English *must* cannot occur in a context like (21a), because of the lack of INDIRECT evidence.

context), *nishchoi* is perfectly felicitous, with the speaker's kernel allowing him to make a valid inference about a past event:

(23) *John and Ram are roommates. John has been away for a few days and returns home to find empty alcohol bottles and trash everywhere. He exclaims:*

- a. *Ami chilam na bole kal nishchoi ekhane purodomey parti*  
 I be.PERF neg COMP yesterday surely/must here in full blast party  
*hoyeche/hoyechilo!*  
 happen.3P.PERF/happen.3P.PAST

'Since I wasn't here, there must have been a crazy party here yesterday!'

Unsurprisingly, only an IR of the modal is felicitous here (given the non-neutral nature of the context).

Since GGIs are the pragmatic implications of a speech act, arrived at by Gricean reasoning, they cannot arise at a sub-locutionary level, a point made most explicitly in Ducrot (1969), and later in Cohen (1971) (as cited in Recanati 2003). Hence, to demonstrate that the implicature we have been describing so far is indeed a GGI, I embed it in the antecedent of a conditional:

- (24) *#Jodi Ram nishchoi or dida'r sathe dekha korechilo giye,*  
 if Ram surely/must his grandmother.GEN with meet do.3P.PAST go.GO.IMPV,  
*tahole or dida ta bollenni keno?*  
 then his grandmother that say.NEG why?

Intended meaning: 'If Ram had met his grandmother (as I infer that he had), then why didn't she say so?'

In the example above, the GGI we specified in (22) is no longer available. There is no knowledge or evidence at utterance time *u* presupposed on the part of the speaker about the event that took place at *t*. The only interpretation with which (24) would be acceptable is a metalinguistic move where I tell you that '*Ram nishchoi met his grandmother*', and you seek to challenge that with the utterance in (24). Then *nishchoi* no longer signals the presence of inferential evidence in that case anyway, but is just a mirror of the previous interlocutor's statement.

## 5. Residual issues

### 5.1. Possibility modals

One of the main reasons the RR problem needed an explanation was that epistemic *necessity* modals, with universal quantificational properties and a strong evidential component specified for inference, appeared to be felicitous in evidence-neutral contexts. The pragmatic desires of the speaker were shown to be affecting the modal base in a crucial way, where an ordering source was shown to exist to fulfill the speaker's conversational goal of reassuring the hearer. One can hypothesize that the universal quantificational aspect of epistemic necessity modals

lend an especially reassuring flavor to an utterance of the type I discussed, given that it is a statement about *all* accessible worlds. This makes one wonder: what about possibility modals? Do they have the REDUCTIVE reading too? If yes, do they serve the purpose or reassurance, given their existential quantificational force?

Empirically, it appears to be the case that possibility modals *do* allow the RR. This is demonstrated with epistemic possibility modals from Bangla and Hindi below:

(25) *Context: said as reassurance to someone worried about Mina's uncared-for relatives in Chicago.*

- a. *Chinta korona, Mina hoyto oder saathe dekha korte Chicago*  
 worry do.2P.NEG, Mina might/possibly them with meet do.IMPV Chicago  
*jaabe*  
 go.3P.FUT  
 'Dont worry, Mina might go to Chicago to meet them.' BANGLA
- b. *Chinta mat kijiye, Mina shayad unse milne Chicago*  
 worry NEG do.2P.PRES, Mina might/possibly they.INSTR meet.IMPV Chicago  
*jayegi*  
 go.3P.FUT.FEM  
 'Don't worry, Mina might go to Chicago to meet them.' HINDI

In both the examples above, the IR is absent, and only the RR is present, as we saw in the necessity cases. While felicity of the RR is achievable via these utterances, the question remains if the conversational goal of reassurance is indeed being fulfilled. Most certainly, a distressed mother would be soothed better with the modal force of necessity (albeit even in the face of complete lack of evidence) than the modal force of possibility. In other words, it is arguably the case that a REDUCTIVE possibility modal makes a much weaker statement than a REDUCTIVE necessity modal. The BOS picks out a set of worlds that fulfill the speaker's conversational goal, and *even within* that set of worlds in which the world of evaluation quite possibly does not exist (recall the whole discussion in Section 4.1), a possibility modal quantifies existentially. This tells us why reassurance with the help of a necessity modal is more forceful. The forcefulness of a reassuring claim with *nishchoi* is thus more productively used in evidence-neutral constructions.

## 5.2. Adverbials vs. auxiliaries

In English, speakers consistently report that *modal adverbs* or *modal adverb complexes* such as *definitely, probably, certainly, quite possibly / it's quite possible that, most probably, surely*, etc. allow the RR quite productively:

(26) *Said in reassurance to a soldier's mother whose son is away at war:*

- a. Don't worry, Raj will *definitely* come back home soon.
- b. Don't worry, Raj will *certainly* come back home soon.
- c. Don't worry, Raj will *most probably* come back home soon.
- d. Don't worry, Raj will *surely* come back home soon.

Notice that while the RR appears to be easily available with these epistemic modal adverbs, the reading becomes much harder to get with *modal auxiliaries*, as shown below. The salient (and only possible) reading in (27) is the INFERENCE one:

- (27)
- a. Don't worry, Raj *must* be coming back home soon!
  - b. Don't worry, Raj *might* be coming back home soon!
  - c. Don't worry, Raj *should* be coming back home soon!
  - d. Don't worry, Raj *could* be coming back home soon!
  - e. Don't worry, Raj *may* be coming back home soon!

In all of the examples with auxiliaries above, native speakers distinctly perceive the need for the speaker to have contextual or prior clues that leads to a statement of inference. In other words, the modalized claims in (27) would be infelicitous in evidence-neutral contexts, while the modalized claims in (26) can be felicitously uttered in neutral contexts. This very interesting dichotomy between epistemic auxiliaries and epistemic adverbials in the same language calls for an explanation, as well as remains to be tested if the same distinction exists in other languages with auxiliaries. We leave a detailed discussion of those issues for future work.

## 6. Conclusion

The main aim of this paper was to demonstrate that discourse goals can affect the formal semantic representations of epistemic modality. This paper provides empirical basis for the claim that epistemic modals can and do appear in certain neutral contexts cross-linguistically. To this end, the data presented shows that epistemic modals, robustly believed to contain a strict evidential restriction of non-direct evidence can occur in evidence-neutral contexts where that restriction is not met. The Bangla modal *nishchoi* is used to shape the empirical discussion, and a formal semantic-pragmatic analysis was presented to locate such usages within the greater literature on modality and evidentiality. The analysis provided is centered around the epistemic modal base, where an additional ordering source is shown to yield non-evidential readings of epistemic modals, thus arguing that discourse goals can affect formal representations of modality.

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### Abbreviations

RR Reductive Reading  
IMPV Imperfective  
FUT Future  
IR Inferential Reading  
BOS Bouletic Ordering Source  
GGI Gricean Generalized Implicature  
PASTPRF Past Perfect  
PERF Perfect  
NEG Negation  
GEN Genitive  
HON Honorific  
MASC Masculine  
FEM Feminine  
CL Classifier

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# Referring to a proposition ‘inside’ a negated one: the Dutch and German modal particles *ook* and *auch* in contextual counterfactuals

A. Marlijn Meijer

This paper is concerned with reference to propositions that occur in the scope of negation. In the constructions considered, the Dutch and German modal particles *ook* and *auch* (literally ‘also’) appear to be necessary for some speakers to refer to non-negated content. In addition, the modal verb *zouden* ‘would’ or simple past (in Dutch) or subjunctive mood (in German), as well as a past participle (in both languages) seem to be required. The main goal of the present study is to account for the unexpected use of the modal particles. It provides a novel analysis of the particles in von Stechow and Gillies’ (2010) framework on *must*. Furthermore, it explores two ways of analyzing the counterfactual markers in theories by Karawani (2014) and Schueler (2008).

## 1. Introduction

The present study investigates modal subordination of propositions containing propositional anaphora. Modal subordination has been studied extensively for pronominal anaphora, see e.g. Roberts (1987, 1989, 1996) and McCready and Asher (2006). This phenomenon concerns the use of modals in establishing reference to phrases that were introduced in the scope of an intensional operator or a negation (Roberts 1996). Examples of modal subordination of propositions containing pronominal anaphors are given in (1) and (2). In (1-a), *a book* is introduced in the antecedent of a conditional. In (2-a), *a car* occurs in the scope of negation. The sentences in (b) and (c) show possible continuations of the sentences in (a). Only the continuations involving the modal verb *will* or the subjunctive modal *would* are grammatical, i.e. they enable reference of *it* to the respective entities.

- (1) a. If John bought [a book]<sub>*i*</sub>, he will be home reading it by now. (Roberts 1989:683)  
b. It<sub>*i*</sub>’ll be a murder mystery.  
c. #It<sub>*i*</sub> is a murder mystery.

- (2) a. John doesn't have [a car]<sub>i</sub>. (Roberts 1997:239)  
 b. It<sub>i</sub> would be in the garage.  
 c. #It is in the garage.

The present study is concerned with reference to propositions taking scope below an operator, such as in (3) and (4). It focuses on reference to non-negated propositions below a negation, as shown in example (4).

- (3) A: A wolf might come in.  $\equiv \diamond\phi^1$   
 B: That <sub>$\phi$</sub>  would be horrible (if a wolf came in).  
 (4) A: The wolf didn't come in.  $\equiv \neg\phi$   
 B: That <sub>$\phi$</sub>  would have been horrible (if the wolf had come in).

As shown in (3A) and (4A), I will use the notation ' $\equiv \diamond\phi$ ' to indicate that in cases like (3), A's utterance is taken to be equivalent to  $\diamond\phi$ . The demonstrative *that* in (3B) is indexed  $\phi$ , which indicates that the demonstrative refers to the proposition under the scope of the possibility modal,  $\phi$ , (and not the entire utterance  $\diamond\phi$ ) in the intended reading. An analogous notation will be used for utterances with negation.

In responses like (4B), reference to  $\phi$ , by *that*, is fine without the antecedent *if the wolf had come in*. On account of a theory like Discourse Representation Theory (DRT, Kamp and Reyle 1993), the felicity of (4B) without the antecedent is surprising, because this theory suggest that, generally, negated content should not be available for reference. Roberts (1989), however, has shown how DRT can be extended in order to account for modal subordination.

The present study deals with the reference to propositions in the scope of negation in Dutch and German. The focus lies on responses similar to (4B), in which the modal particles *ook* and *auch* (literally 'also') can be used to disambiguate the reference to the non-negated proposition. The dialogues in (5) and (6) show the kind of responses at issue, in Dutch and German respectively. In (5B) and (6B), which include the modal particles, a reading in which the anaphors *dat* and *das* target the negated proposition does not seem to be available.<sup>2</sup>

- (5) A: Jan heeft gisteren niet gewerkt.  $\equiv \neg\phi$   
 Jan has yesterday not worked  
 'Jan didn't work yesterday.'  
 B: Dat <sub>$\phi$</sub>  zou ook raar zijn geweest.  
 that MOD OOK strange be been  
 'That would have been strange.'  
 (6) A: Hans hat gestern nicht gearbeitet.  $\equiv \neg\phi$   
 Hans has yesterday not worked  
 'Jan didn't work yesterday.'  
 B: Das <sub>$\phi$</sub>  wäre auch komisch gewesen.  
 that BE.SBJV AUCH strange be been  
 'That would have been strange.'

Besides the modal particles, both responses involve a modal verb or subjunctive mood as well

<sup>1</sup>The following general meaning is attached to the symbols used here:  $\diamond$  'possibility',  $\neg$  'negation',  $\square$  'necessity' and  $\equiv$  'equivalence'.

<sup>2</sup>The judgments presented here were informally gained by talking to native speakers of Dutch and German.

as a past participle. In the Dutch response in (5), there is the modal *zouden* ‘would’ and the past participle *geweest* ‘been’. In the German example (6), we see the subjunctive form *wäre* ‘be<sub>subjv</sub>’ and the past participle *gewesen* ‘been’. The meaning that arises in both cases is that if Jan had worked, that would have been strange.

The present study intends to explain why these markers are necessary in targeting a proposition below negation in Dutch and German, focusing especially on the modal particles. The paper is structured as follows. In section 2, I discuss the data in (5) and (6) in more detail. In section 3, the existing theories on *auch* and *ook* are dealt with, before presenting a new analysis of the particles, based on von Stechow and Gillies (2010). In section 4, I consider two approaches to counterfactual conditionals, by Karawani (2014) and Schueler (2008), and assess if they can account for the use of the tense and mood markers mentioned above.

## 2. Referring to propositions in the scope of negation

In Dutch and German, there are several ways of referring to a proposition below a negated one (for reasons of space, I will only be dealing with Dutch examples in this and the following section; if not mentioned otherwise, the reader can assume the same judgments hold for German). Krifka (2013) argues that sentences with propositional negation introduce two propositional discourse referents: a negated one and a non-negated one. These can both be targeted by propositional anaphors. Evidence comes from dialogues like the one in (7).

- (7) A: Twee plus twee is niet vijf.  $\equiv \neg\phi$   
 two plus two is not five  
 ‘Two plus two isn’t five.’  
 B: Iedereen weet dat<sub>¬φ</sub>.  
 everyone knows that  
 ‘Everyone knows that.’  
 C: Dat<sub>φ</sub> zou een tegenstelling zijn.  
 that would a contradiction be  
 ‘That would be a contradiction.’ (English example from Krifka 2013)

As shown in (7B), *dat* can be used to refer to the negative assertion by A,<sup>3</sup> conveying that everyone knows that two plus two is not five. The example in (7C) shows that the non-negated proposition *twee plus twee is vijf* (‘two plus two is five’) can also be targeted by *dat*.

Another way to target the non-negated propositional discourse referent with *dat* would be by employing a contrastive marker such as *maar* ‘but’, as shown in the example below.

- (8) Jan heeft het schilderij niet gestolen, maar iedereen gelooft dat (wel).  
 Jan has the painting not stolen but everyone believes that WEL  
 ‘Jan didn’t steal the painting, but everyone believes he did.’

The present study focuses on responses that involve the Dutch and German propositional anaphors *dat* and *das* ‘that’ in the subject position, as discussed in the introduction. I will dub

<sup>3</sup>More needs to be said about the nature of propositional anaphora such as *dat/that* in these constructions, especially in light of recent work by Moulton (2015) and the notion of propositional content in this work. For reasons of space, this issue cannot be addressed in the present paper.

these constructions ‘contextual counterfactuals’, since they get a counterfactual interpretation in the interpretation that we are after, i.e. the referent of *dat/das* is taken to be untrue. Note that there are of course several ways to employ contextual counterfactuals. The ones focused on here contain predicates of personal taste, as in (5) and (6). In the next subsection, I discuss the distribution of *auch* and *ook* in such constructions, comparing them to contextual counterfactuals with other predicates. In the subsection after that I deal with the marking by modal verbs and the past participle. Finally, I discuss the interaction of the verbal markers and the modal particles.

### 2.1. The modal particles “*auch*” and “*ook*” in contextual counterfactuals

As we saw above, in examples (7) and (8), the modal particles *auch* and *ook* are not always necessary to refer to the non-negated proposition. This is also true in contextual counterfactuals. The example in (9) is a case in which *ook* can but need not be used. (Note that in this subsection, the past participle *geweest* is present in all examples. The use of the past participle itself is discussed in section 2.2. and its interaction with the modal particles is dealt with in section 2.3.)

- (9) A: Twee plus twee is niet vijf.  $\equiv \neg\phi$   
 two plus two is not five  
 ‘Two plus two isn’t five.’  
 B: Dat <sub>$\phi$</sub>  zou (ook) een tegenstelling zijn geweest.  
 that MOD OOK a contradiction be been  
 ‘That would have been a contradiction.’

If *dat* in (9) did refer to  $\neg\phi$  a contradictory discourse would arise, claiming that two plus two not being five is a contradiction. This, obviously, is not true. This fact might explain why the reference to  $\phi$  in this context need not be marked more than necessary, as there is only one consistent interpretation.

In (10), B remarks that Jan winning the last game would have enabled him to take part in the final. If *dat* referred to  $\neg\phi$ , B’s utterance would mean that not winning the final match would lead to the final. This seems a highly unlikely scenario. Here, B’s response seems more natural without *ook*.

- (10) A: Jan heeft de laatste wedstrijd niet gewonnen.  $\equiv \neg\phi$   
 Jan has the final match not won  
 ‘Jan hasn’t won the final match.’  
 B: Dat <sub>$\phi$</sub>  zou nodig zijn geweest om deel te nemen aan de finale.  
 that MOD required be been to part to take on the finale  
 ‘That would have been required for taking part in the final.’

In both (9) and (10), *ook* is not required in order to obtain a counterfactual reading. An explanation for this could be that the non-negated proposition, as the referent of the propositional anaphor, is the only referent that is compatible with the rest of the utterance in these respective contexts.

The use of the modal particles seems to be related to the expectations of the speaker. For instance, in the Dutch translation of (3) (in (11)), *ook* does not seem required either. In fact,

using *ook* might have been strange in this case.

- (11) A: Er is geen wolf naar binnen gekomen.  $\equiv \neg\phi$   
 there is no wolf to inside came  
 'No wolf entered the house.'  
 B: Dat <sub>$\phi$</sub>  zou naar zijn geweest.  
 that MOD awful be been  
 'That would have been awful.'

In this case, obviously, a wolf not coming into the house would not have been awful; whereas a wolf coming into the house would have been. Thus even without knowing much about the context, with our world knowledge about wolves, we already have a bias towards to non-negated proposition when the used predicate is "awful". However, for the examples (5) and (6) involving Jan having gone to work or not having gone to work does not seem to involve the same kind of bias. In this case, depending on the context, Jan not having gone to work might be considered strange, as well as his having gone to work.

## 2.2. Tense marking in contextual counterfactuals

In the examples of Dutch contextual counterfactuals up until now all contained the modal verb *zouden*. The Dutch verb *zouden* is often analysed as the past form of the verb *zullen* 'shall'/'will' (see e.g. Aelbrecht 2007, Verkuyl and Broekhuis 2013). This verb is thus similar to *would*, which is often considered the past counterpart of *will* (see e.g. Abusch 1997). The German examples all contained subjunctive mood (e.g. *wären* 'be<sub>subjv</sub>').

In the introduction, it was already mentioned that in both German and Dutch the past participles *gewesen* and *geweest* 'been' are often required to target the non-negated proposition with *das* and *dat*. Responses without *geweest* or *gewesen* (that also lack *ook* or *auch*) do not seem to target the non-negated proposition, as in example (12).

- (12) A: Jan heeft gisteren niet gewerkt.  $\equiv \neg\phi$   
 Jan has yesterday not worked  
 'Jan didn't work yesterday.'  
 B: Dat <sub>$\phi$</sub>  zou raar zijn #(geweest).  
 that MOD strange be been  
 'That would have been strange, if he did.'

Up until now, only antecedent propositions containing past tense have been discussed. Intuitively, it may seem appealing to argue that the marking with the participles is related to the fact that the targeted proposition also involves a past participle. However, as shown for Dutch in (13), when the antecedent proposition is not in perfect tense and moreover discusses a future event, responses with the past participle in the contextual counterfactual are required as well. In each of these cases, the additional use of the modal particle *ook* would strengthen the targeting of the non-negated proposition. The responses including the modal particles would thus be the most preferred one.

- (13) A: Jan gaat morgen niet werken.  $\equiv \neg\phi$   
 Jan goes tomorrow not work

- ‘Jan isn’t going to work tomorrow.’  
 B: Dat<sub>φ</sub> zou raar zijn #(geweest).  
 that MOD strange be been  
 ‘That would have been strange, if he did.’

Native speakers of German report different intuitions in case of an antecedent involving a future event. Without the past participle, the propositional anaphor must target the negated proposition, as in Dutch, as shown in (14B). If *auch* is added, the referent of *das* changes to the non-negated proposition. However, the response with a past participle and without *auch* is simply uninterpretable. Again, if *auch* is added, the sentences becomes interpretable again and the anaphor must target the non-negative proposition, see (14B’).

- (14) A: Jan geht morgen nicht arbeiten.  $\equiv \neg\phi$   
 Jan goes tomorrow not work  
 ‘Jan isn’t going to work tomorrow.’  
 B: Das<sub>φ</sub> wäre #(auch) komisch.  
 that MOD AUCH strange been  
 ‘That would have been strange if he did.’  
 B’: Das<sub>φ</sub> wäre?(auch) komisch (gewesen).  
 that MOD AUCH strange been  
 ‘That would have been strange if he did.’

There are some further differences between the languages. In Dutch, the simple past marking on the verb *zijn* ‘to be’ can replace *zouden*, as illustrated in B in example (15). Leaving out the past participle in this construction leads to plain ungrammaticality of the response.

- (15) A: Jan heeft gisteren niet gewerkt.  $\equiv \neg\phi$   
 Jan has yesterday not worked  
 ‘Jan didn’t work yesterday.’  
 B: Dat<sub>φ</sub> was (ook) raar \*(geweest).  
 that was OOK strange been  
 ‘That would have been strange, if he did.’

This use of the past tense morpheme is clearly different from its regular use, since there is no past tense interpretation. This use of the past tense might be an archaic subjunctive form. It could also be a new subjunctive form that competes with the modal *zouden*. Another non-past uses of Dutch past morphemes, the past for future, is discussed in Karawani and Zeijlstra (2013a). For reasons of space, these non-past uses cannot be discussed in more detail.

In German, which marks subjunctive mood on the verb in case of *sein* ‘to be’, one cannot use past tense instead of the subjunctive marking, see B in (16).

- (16) A: Hans hat gestern nicht gearbeitet.  $\equiv \neg\phi$   
 jan has yesterday not worked  
 ‘Jan didn’t work yesterday.’  
 B: \*Das<sub>φ</sub> war auch komisch gewesen.  
 that was AUCH strange been  
 ‘That would have been strange, if he did.’

### 2.3. The modal particles and tense/modal marking combined

After having considered the marking by the modal particles and the past participle, the question arises how the two markers interact, i.e. how much marking by other items is required in cases where the modal particles *auch* and *ook* are present. We saw for the particles that they appear to be used whenever the previous proposition does not give rise to a certain expectation. For a state of affairs for which we do not expect an a priori bias towards the negative or non-negative proposition, such as Jan working or not, the particles seemed helpful if not necessary to distinguish between the two possible referents of the propositional anaphor. In (17), B responds by using *ook* and *zouden* without the past participle. In this case, native speakers report that reference to the non-negated proposition is more plausible (in comparison to the negated one), but this type of response appears to be somewhat dispreferred to the one involving the past participle.

- (17) A: Jan heeft gisteren niet gewerkt.  $\equiv -\phi$   
 Jan has yesterday not worked  
 ‘Jan didn’t work yesterday.’  
 B: Dat <sub>$\phi$</sub>  zou ook raar zijn.  
 that MOD OOK strange be been  
 ‘That would have been strange, if he did.’

## 3. Theories of “ook”/“auch”

This section deals with the meaning of the modal particles *ook* and *auch*. First, it discusses the properties that set the modal particles apart from their additive counterparts. Second, it discusses the existing theories on *auch* by Thurmair (1989) and Karagjosova (2003). Third, it proposes a novel theory for *auch* and *ook* in the framework of von Stechow and Gillies (2010).

### 3.1. The modal particles “ook” and “auch”

As literature on Dutch modal particles is scarce, I will mainly focus on German modal particles in general and *auch* in particular in this section. Where necessary, I will provide the reader with Dutch examples with *ook* to show that the particles express the same meaning.

Both *ook* and *auch* have focus-sensitive additive counterparts in their respective languages. The additive particles associate with the constituent in focus, in the sentence that they occur in. Example (18) illustrates this for *auch*. Here, *auch* associates with *Marie*, which it c-commands. The additive particles presuppose that the relevant predicate holds for an alternative to the focused constituent as well (Krifka 1998). In (18), the presupposition arises that Peter has called someone beside Marie. Thus, (18) would be appropriate in a context in which such an alternative is present.

- (18) Peter hat auch MARIE angerufen.  
 Peter has AUCH Marie called  
 ‘Peter has also called Mary.’

There are several ways in which the modal particles can be distinguished from other particles such as the focus-sensitive additive particles. First, the modal particles cannot be stressed (Thurmair 1989: 22), whereas the additive particles can. The dialogues in (19) and (20) illustrate this. As shown, stressed *auch*, in contrast to unstressed *auch*, associates with a constituent in focus outside its c-command domain (see e.g. Reis and Rosengren 1997 and Krifka 1998 for analyses of stressed *auch*). (19B) shows that stressed *auch* gets an additive interpretation. The context, i.e. (19A), provides the relevant alternative. Thus, the presupposition that additive *auch* gives rise to, that there is an alternative to German, for which the the predicate *nicht einfach sein* ‘not being easy’ holds as well, is satisfied.

- (19) A: Russisch ist ganz schön schwer.  
 Russian is very nice difficult  
 ‘Russian is very difficult.’  
 B: [Deutsch]<sub>F</sub> ist AUCH nicht einfach.  
 German is also not easy  
 ‘German isn’t easy either.’ (Thurmair 1989:155)

(20) illustrates the use of stressed *auch* without an explicit alternative in the context. The example is only felicitous if an alternative to *Deutsch* can be accommodated. The modal interpretation of *auch* is not available, since the particle is stressed, but the additive one could be, if the context allows for the accommodation of the presupposition.

- (20) A: Ich hab von dem Text nicht alles verstanden.  
 I have from the.DAT text not everything understood  
 ‘I didn’t understand everything in the text.’  
 B: Naja, [Deutsch]<sub>F</sub> ist AUCH nicht einfach.  
 INTERJ German is AUCH not easy  
 ‘Well, German isn’t easy either.’

Second, most modal particles have a rather restricted syntactic distribution in comparison to other particles (Thurmair 1989: 27-30).<sup>4</sup> (21) illustrates this (assuming that the dialogue takes place in a context in which the presupposition of the additive particle *cannot* be accommodated). It is shown that the modal particle *auch* cannot occur in SpecCP. The additive particle *auch* can occur in these positions.

- (21) A: Ich hab von dem Text nicht alles verstanden.  
 I have from the.DAT text not everything understood  
 ‘I didn’t understand everything in the text.’  
 B: Naja, ⟨#auch⟩ Deutsch ist ⟨auch⟩ nicht einfach.  
 INTERJ AUCH German is AUCH not easy  
 ‘Well, German isn’t easy, of course.’

The example below shows that the same holds for *ook* in its modal meaning. Again, the additive particle *ook* can occur in these positions.

<sup>4</sup>There are two exceptions to this property. First, some modal particles can occur sentence initially in combination with a *wh*-word, e.g. *denn* (literally ‘then’). Second, some modal particles, e.g. *schon* (literally ‘already’), can, on their own, constitute an answer to a question. The interested reader is referred to Thurmair (1989).

- (22) A: Ik heb van de tekst niet alles begrepen.  
 I have from the text not everything understood  
 'I didn't understand everything in the text.'  
 B': Naja, (#ook) Duits is (ook) niet makkelijk.  
 INTERJ OOK German is OOK not easy  
 'Well, German isn't easy, of course.'

Having set the modal particles apart from their additive counterparts, the next section now turns to previous analyses of the modal particles.

### 3.2. *Thurmair (1989)*

In her seminal work on German modal particles, Thurmair intends to provide a broad semantics for each of the particles. This way, she accounts for the particles in a general way. From this general account she can derive the more specific uses of the particles, i.e. their uses in different speech acts or in different contexts. For *auch*, she suggests that the following features apply: [CONNECTION], [EXPECTED] and [DESIRED].<sup>5</sup> The former two are they most important ones for *auch* and apply in most of its uses.

The feature [CONNECTION] indicates that the particle stands in a certain relation with a proposition or act that is relevant in the current discourse (Thurmair 1989: 101). (23) shows an example by Thurmair where the *auch*-utterance by B relates to the utterance by A. Speaker A utters that s/he did not understand everything from some text. Speaker B then response that German is not an easy language. On the first sight, these propositions might not seem very coherent. However, with the use of *auch*, speaker B signals that his/her utterance is related to the previous utterance.

- (23) A: Ich hab von dem Text nicht alles verstanden.  
 I have from the.DAT text not everything understood  
 'I didn't understand everything in the text.'  
 B: Naja, Deutsch ist auch nicht einfach.  
 INTERJ German is AUCH not easy  
 'Well, German isn't easy, of course.' (Thurmair 1989:155)  
 B': #Naja, Deutsch ist auch einfach.  
 INTERJ German is AUCH easy  
 'Well, German is easy, of course.'

By using *auch* in his/her response, speaker B notes that the previous utterance was expected since, according to him/her, German is not an easy language. To explain the relation between the two utterances, we need the second key feature that Thurmair argues is relevant for *auch*: the feature [EXPECTED]. If we were to take the negation out of B's utterance, we turn his/her response into one indicating that s/he considers German an easy language. Now, the response becomes incoherent, as shown in (23B'). The speaker of B' namely still uses *auch*, which indicates, on Thurmair's account, that the considers the previous proposition was expected. However, the meaning of the utterance in B' is difficult to relate to the previous one. Reading a text in an easy language should make the text more and not less easy to comprehend. Response (23B')

<sup>5</sup>The German notions that Thurmair uses are, respectively, [KONNEX], [ERWARTET] and [ERWUENSCHT].

thus seems to contrast with the assertion in (23A). on Thurmair's account, in this discourse, *auch* cannot be used since the marking of expectancy is odd here. As a result, the discourse is incoherent.

The dialogue in (24) shows that Dutch *ook* functions similarly.

- (24) A: Ik heb van de tekst niet alles begrepen.  
 I have from the text not everything understood  
 'I didn't understand everything in the text.'  
 B: Naja, Duits is ook niet makkelijk.  
 INTERJ German is OOK not easy  
 'Well, German isn't easy, of course.'  
 B': #Naja, Duits is ook makkelijk.  
 INTERJ German is OOK easy  
 'Well, German is easy, of course.'

Finally, Thurmair claims that in some contexts *auch* also carries the feature [DESIRED]. This feature only applies in the use of *auch* in polar questions, such as (25), and therefore less relevant for the present study. The particle here adds the expectation that the children have been good.

- (25) Context: before handing out candy to children.

Wart ihr auch brav?  
 were you AUCH good  
 'Have you been good?'

The Dutch example in (26) shows that *ook* can be used in the same context.

- (26) Context: before handing out candy to children.

Zijn jullie ook braaf geweest?  
 are you OOK good been  
 'Have you been good?'

As mentioned, Thurmair intentionally keeps her features rather general, such that they can account for most of the uses of the particles. The upside of such a broad account is that most uses of *auch* can be included in her account. The downside, however, is that the account is not very specific. The notion of expectedness, for instance, stays rather vague as it is not specified what it means for a speaker to expect a certain proposition.

In section 3.4, I propose a novel analysis of the semantics of *auch* and *ook* in assertions that builds on Thurmair's analysis but is more specific with respect to the notion of expectedness.

### 3.3. Karagjosova (2003)

In her discussion of *auch*, Karagjosova (2003) zooms in on three different aspects of the meaning and use of the particle: the actual meaning, the utterance illocution and the discourse function.

As for the meaning, Karagjosova argues that by using *auch*, the speaker indicates that s/he believes the proposition s/he responds to,  $\phi$ , holds and, furthermore, that there is a 'inferential' relation between the proposition responded to and the proposition in which *auch* occurs,

$\psi$ . For for instance the *auch*-utterance in (27B), she suggests that we can paraphrase it with ‘it is because he was ill’ (Karagjosova 2003:341). As for the illocution of the *auch*-utterance, Karagjosova proposes that the speaker confirms that the previous utterance is true and gives a reason for it being true. Note that this is quite similar to Thurmair’s analysis. Finally, concerning the discourse function of the particle, Karagjosova states that the speaker of the *auch*-utterance is correcting the speaker of the previous utterance, in saying that the previously uttered proposition,  $\phi$ , is not new, as is implicitly suggested by the speaker of  $\phi$  who proposed adding it to the common ground.

Let’s apply Karagjosova’s analysis to the example in (27).

- (27) A: Peter sieht sehr schlecht aus.  $\equiv \phi$   
 Peter looks very bad out  
 ‘Peter looks very ill.’  
 B: Er ist auch lange krank gewesen.  
 he is AUCH long ill been  
 ‘Well, he has been ill for a long time.’ (Karagjosova 2003:341)

A says that Peter is looking very ill. By his/her *auch*-utterance, according to Karagjosova, B confirms that Peter is looking very ill and is providing a reason for Peter looking ill, namely, that he has been ill for a long time. So in responding, B provides more information on A’s utterance and shows that he also knows why A’s utterance is true. Thereby B signals that he already knew that Peter looks bad, indicating to A that it is not new information.

It seems that Karagjosova can account for the data in (27) nicely. However, note that the use of *ook* and *auch* in the contextual counterfactuals does not quite seem to fit in her analysis. It would be odd to say that commenting that  $\phi$  being true would be strange, as in (12), is providing a reason for  $\phi$  or construing a causal relation between propositions. Moreover, Bergmann and Repp (2015) have compared the German causal discourse marker *denn* ‘because’ and the modal particle *eben* (literally ‘obviously’), which has been claimed to indicate causality, to *auch* in a recall study. The result was that the former two appear to aid the recalling of information, whereas this effect, which has been argued to be a hallmark of causal markers (e.g. in Caron, Micko and Thüring (1988)), was not found for *auch*. The data suggest that *auch* is not causal in the sense that *denn* and *eben* are.

### 3.4. Present proposal

The present paper argues that the use and semantics of *auch* and *ook* in assertions can be captured in von Fintel and Gillies’ (2010) framework on *must*. In the next subsection, this framework will be presented. After that, the modal particles will be embedded in the framework.

#### 3.4.1. Von Fintel and Gillies (2010) on “must”

Von Fintel and Gillies set out to explain the intuitively attested difference in strength between the modal claim in (28B’) and the non-modal claim in (28B), as the non-modal one appears more forceful. On account of theories that claim that *must* is a strong modal, i.e. one expressing necessity, this difference is unexpected. Such theories state that a strong modal quantifies over all worlds that are compatible with what is known. The actual world is always among such a

set. Therefore,  $must(\phi)$  entails  $\phi$ . Consequently, it is expected that the modalized proposition expresses more strength. This expectation is not borne out.

- (28) A: Where are my keys?  
 B: They are in the kitchen drawer.  
 B': They must be in the kitchen drawer. (Von Fintel and Gillies 2010:2)

In order to account for the contrast in (28), it has been claimed that *must* should be analyzed as a somewhat weaker modal, e.g. by Kratzer (1991). Von Fintel and Gillies, however, argue that *must* is a strong modal that comes with an evidential presupposition.

In their account, *must* quantifies over the worlds that are compatible with what is known, that is, the modal base. However, von Fintel and Gillies propose that not all the propositions we believe to be true have the same status (Von Fintel and Gillies 2010:25). Some information is more privileged than other information. The authors propose that a Kernel  $K$  contains the propositions that describe the information we have gained by direct evidence. Furthermore, trustworthy reports are in  $K$  (Von Fintel and Gillies 2010:23). Matthewson (2015) argues that general world knowledge should also be added to the set. I follow her in this extension. Now,  $K$  determines a modal base  $B_K$ . Both are defined in (29).

- (29) Definition of Kernels and Bases (Von Fintel and Gillies 2010:25)  
 $K$  is a kernel for  $B_K$ ,  $B_K$  is determined by kernel  $K$ , only if:
- i.  $K$  is a set of propositions (if  $P \in K$  then  $P \subseteq W$ )
  - ii.  $B_K = \cap K$

So  $K$  is a set of propositions that the speaker has ‘convincing’ evidence for. The same propositions are elements of the set  $B_K$ . However, in this set the propositions are intersected. Thus,  $B_K$  ‘directly settles’ certain propositions that  $K$  does not. Still, both sets entail the same propositions. In this framework, this entailment is not problematic since direct settlement is not the same as entailment. Suppose for instance that a speaker has the knowledge that *if people come in with wet rain gear, it is raining*, that is, that proposition is in  $K$ . Now, if s/he is sitting in a windowless room and people come in with wet raingear, the proposition *people come in with wet rain gear* is also in  $K$ . The propositions are intersected in  $B_K$ . This set now directly settles that *it is raining*. The kernel  $K$  also entails this proposition, but it does not directly settle it (Von Fintel and Gillies 2010:27).

For *must*, von Fintel and Gillies claim that it comes with the presupposition that its prejacent is not directly settled by  $K$ , but it is by  $B_K$ ; see (30).

- (30) Definition of Strong *must* + Evidentiality (Von Fintel and Gillies 2010:26)  
 Fix a  $c$ -relevant kernel  $K$ :
- i.  $[[must \phi]]^{c,w}$  is defined only if  $K$  does not directly settle  $[[\phi]]^c$
  - ii.  $[[must \phi]]^{c,w} = 1$  if  $B_K \subseteq [[\phi]]^c$

The scenario in (31) illustrates this. Here, Billy sees the rain, so *it is raining* is in  $K$ . Now, she can utter (31B) felicitously. But she can’t say (31B’), according to von Fintel and Gillies, because she has direct evidence for the prejacent and thus it is directly settled by  $K$ , violating the presupposition of *must*.

- (31) [Billy seeing the pouring rain] (Von Fintel and Gillies 2010:26)  
 B: It’s raining.  
 B’: ?It must be raining.

The question arises what it means to directly settle a proposition and how this is different from entailment. Von Fintel and Gillies provide two implementations for direct settlement without choosing between the two. For reasons of space, I only discuss the first implementation; the interested reader is referred to von Fintel and Gillies (2010).

The implementation ‘explicit representation’ says that  $K$  settles  $P$  (a subset of  $W$ ) ‘just in case either  $P$  is entailed or contradicted by one of the pieces of information explicitly given by the context’ (Von Fintel and Gillies 2010:29); see (32) for a formalization.

- (32) Explicit Representation (Von Fintel and Gillies 2010:29)  
 $K$  directly settles whether  $P$  iff either  $X \subseteq P$  or  $X \cap P = \emptyset$  for some  $X \in K$ .

In order to illustrate Explicit Representation, von Fintel and Gillies present the following situation. Assume that there are two sets of possible worlds,  $P$  and  $Q$  and both are subsets of  $K$  (thus:  $P, Q \subset K$ ). Let’s consider a third set  $R$ , such that  $R$  would, if it were true, overlap with both  $P$  and  $Q$ , but not with their intersection (e.g.  $R \cap P \neq \emptyset$  and  $R \cap Q \neq \emptyset$  and  $R \cap (P \cap Q) = \emptyset$ ). Figure 1 illustrates what  $K$  would look like (assuming there is no other information available). In this scenario, we know that  $P$  and  $Q$  are in  $K$ . Since there are no worlds in which  $P$  and  $Q$  are part of  $K$  as well as  $R$ ,  $R$  is contradicted by the current kernel (Von Fintel and Gillies 2010:29). Thus, as long as there is no *explicit* information in the Kernel that contradicts or entails the set under discussion, it is not directly settled.

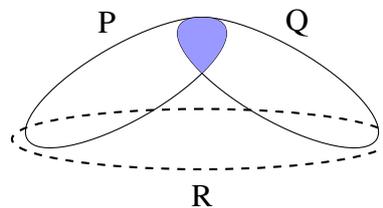


Figure 1: Illustration of explicit representation, based on von Fintel and Gillies (2010:30)

### 3.4.2. “Auch” and “ook” in the framework of von Fintel and Gillies

Going back to *auch* and *ook*, let’s recapitulate what we saw in section 2. The modal particles *auch* and *ook* seem to aid the reference to the non-negated proposition in constructions which involve a predicate of personal taste, see (33) for Dutch and (34) for German, repeated from (5) and (6).

- (33) A: Jan heeft gisteren niet gewerkt.  $\equiv \neg\phi$   
 jan has yesterday not worked  
 ‘Jan didn’t work yesterday.’  
 B: Dat <sub>$\phi$</sub>  zou ook raar zijn geweest.  
 that MOD OOK strange be been  
 ‘That would have been strange, if he did.’

- (34) A: Hans hat gestern nicht gearbeitet.  $\equiv \neg\phi$   
 jan has yesterday not worked  
 ‘Jan didn’t work yesterday.’  
 B: Das <sub>$\phi$</sub>  wäre auch komisch gewesen.  
 that BE.SBJV AUCH strange been  
 ‘That would have been strange, if he did.’

For these modal particles, I propose that they can be captured in the framework by von Fintel and Gillies (2010). As discussed above, Thurmair argues that *auch* relates an utterance to the previous one and indicates that it was expected. I propose that *auch* and *ook* come with the presupposition that the previous proposition had already been directly settled by the  $B_K$  of the speaker of the *auch/ook*-utterance, before the previous proposition was asserted. The definition in (35) shows the formalization. Here,  $\phi$  is the proposition that the speaker of the *auch/ook*-utterance responds to and  $\psi$  is the proposition that the particles occur in.

(35) **Presupposition for AUCH/OOK**

Fix a contextually relevant kernel  $K$ :

$[[\text{AUCH/OOK } (\phi, \psi)]]^{c,w} = 1$  if  $B_{K_s} \subseteq [[\phi]]^c$ , before  $\phi$  was uttered<sup>6</sup>

So by using *auch* or *ook*, the speaker indicates that based on his/her  $B_K$ , the previous proposition was directly settled already. The modal particles thus signal that a speaker already took the previous utterance to be true. In case of the *auch* and *ook*-utterances in (33) and (34), the particles indicate that the negated proposition  $\neg\phi$ , that is, A’s entire utterance, was directly settled by B’s  $B_K$  before A uttered it. Consequently, B’s utterance must express agreement with the negative statement, in order for the utterance to be coherent.

Let’s see how this analysis fares with other uses of *auch* and *ook*. In section 3.3, we saw the following example:

- (36) A: Peter sieht sehr schlecht aus.  $\equiv \phi$   
 Peter looks very bad out  
 ‘Peter looks very ill.’  
 B: Er ist auch lange krank gewesen.  $\equiv \psi$   
 he is AUCH long ill been  
 ‘Well, he has been ill for a long time.’ (Karagjosova 2003:341)

For the proposed analysis for *auch* to work out in the case of (36), it is thus required that speaker B’s  $B_K$  directly settles  $\phi$ . With his/her utterance, B indicates that s/he knows that Peter has been ill for a long time. Now, for the direct settlement to work, B needs to have the world knowledge that *if one is ill for a long time, one looks bad*. Since B knows that Peter was ill, his/her  $B_K$  directly settled that Peter looked bad before it was uttered.

Another example from German was taken from Thurmair and is repeated in (37).

- (37) A: Ich hab von dem Text nicht alles verstanden.  
 I have from the.DAT text not everything understood  
 ‘I didn’t understand everything in the text.’

<sup>6</sup>Note that in (33) and (34), if a speaker A is considered a reliable speaker by B, A’s assertion would be added to B’s Kernel directly.

- B: Naja, Deutsch ist auch nicht einfach.  
 INTERJ German is AUCH not easy  
 'Well, German isn't easy, of course.' (Thurmair 1989:155)

Again, according to the proposed theory, there should be a proposition in speaker B's  $B_K$  that makes it directly settleable that speaker A did not understand everything from the German text s/he read. Since B utters that *German is not easy*, we know s/he knows this proposition. Furthermore, it might be part of B's world knowledge that *reading a text in a difficult language makes it difficult to understand everything*. Now, in B's  $B_K$  the propositions are intersected, leading to the intersection in  $B_K$ :

- (38) *reading a text in a difficult language makes it difficult to understand everything*  $\cap$  *German is a difficult language*  $\cap$  *you read a text in German*  $\cap$  ...

Now,  $B_K$  directly settles that *reading a text in a difficult language makes it difficult to understand everything*, crucially, also without A's assertion - as long as B knew that A was reading a text in German.

Note that the definition in (35) remains agnostic about  $K$  directly settling the proposition in question. Consider a scenario in which two people know that their friend Peter has been ill for a long time and looks ill, and they are aware of each other's knowledge. Now, assume they are having the same conversation about this as we have seen before; see (39).

- (39) A: Peter sieht sehr schlecht aus.  
 Peter looks very bad out  
 'Peter looks very ill.'  
 B: (#) Er ist auch lange krank gewesen.  
 he is AUCH long ill been  
 'Well, he has been ill for a long time.'

In this scenario, some speakers consider B's utterance marked. They suggest that since A's utterance does not contain new information, this utterance is most naturally read as conveying that A is worried about how ill Peter (still) looks. With his/her *auch*-utterance, B signals that Peter looking bad is not surprising to him/her and that A's utterance does not provide any new information to him/her. However, on this specific reading of A's utterance and the knowledge that A and B are aware of their mutual knowledge, a speaker might consider B's *auch*-utterance quite obvious and therefore marked. Yet, not all native speakers of German agree that B's response is marked. Furthermore, the native speakers of Dutch that were asked, suggest that the Dutch translation of (39) is perfectly grammatical. Note that in German, the use of a modal particle such as *eben* or *halt* (literally 'obviously') instead of *auch* in B's response would improve the utterance for the speakers who dislike (39B). Equivalent particles are not available in Dutch. This might lead to different acceptability of the use of *auch* and *ook* in scenarios like (39).

For now, I assume that these scenarios, in which both speakers know  $\phi$  and are aware of each other's knowledge, in principle license *auch/ook*-utterances, but that such a move can be considered pragmatically marked because it does not contain any new information. Future research should point out whether this is in fact the case. One way to test this would be to let native speakers rate the acceptability of *auch/ook*-utterances in scenarios in which the knowledge of

the speakers, with respect to the information conveyed in the dialogue, differs. Note that in the current proposal it is unclear whether an account of the modal particles in terms of the kernel is to be preferred over one in terms of epistemic modal bases (see Matthewson 2015 for a comparison of the two approaches). In the present proposal the kernel might not be used effectively, as it is allowed to directly settle propositions as well.<sup>7</sup> As mentioned, future research should point out whether there should be a further restriction (as to what the speaker knows about  $\phi$ ).

It seems that the presupposition in (35) accounts for the use of the particles well. A problem for the account might be that notions like world knowledge and trustworthy reports could be different for different speakers and moreover, it is unclear what counts as world knowledge and what not. I do not consider this a problem. On this account, the use of *auch/ook* is expected to deviate slightly from speaker to speaker, since the satisfaction of the presupposition hinges heavily on the speaker's direct evidence, world knowledge and trustworthy reports.

#### 4. The counterfactual marking

As mentioned in the introduction, the main goal of the present paper is to explain the use of the modal particles in contextual counterfactuals. Nevertheless, this section explores two aspects of the verbal markers in these constructions. First I consider the counterfactual marking of the verbs. Then I look into the conditional reading that arises. For reasons of space, I will mainly focus on Dutch.

Following Roberts' (1989) work on modal subordination and Schueler's (2008) account of implicit conditionals, I assume that the contextual counterfactuals under discussion here are interpreted as conditionals. As shown in (40), counterfactual conditionals in Dutch also are marked by the combination of *zouden* and *geweest*, in (40-a), or by the past tense *was* and *geweest*, in (40-b). This is the same marking we saw in the contextual counterfactuals. Example (41) shows that the same holds for German counterfactual conditionals.

(40) Context: Jan didn't work yesterday.

- a. Als Jan gisteren had gewerkt, dan zou dat raar zijn geweest.  
if Jan yesterday had worked then MOD that strange be been  
'If Jan had worked yesterday, then it would have been strange.'
- b. Als Jan gisteren had gewerkt, dan was dat raar geweest.  
if Jan yesterday had worked then was that strange been  
'If Jan had worked yesterday, then it would have been strange.'

(41) Context: Jan didn't work yesterday.

Wenn Jan gestern gearbeitet hätte, dann wäre das komisch gewesen.  
if Jan yesterday worked have.SBJV then be.SBJV that strange been  
'If Jan had worked yesterday, then it would have been strange.'

I assume that the use of conditional morphology in contextual counterfactuals triggers a conditional reading. This assumption is inspired by a similar kind of reasoning for so-called 'implicit' conditionals by Schueler (2008).

Schueler (2008) investigates implicit conditionals in English. These are constructions like (42), which involve *would*. Schueler proposes that *would* indicates that the sentence in (42) is a

<sup>7</sup>I thank Martina Faller for pointing this out to me.

conditional whose antecedent is implicit. That is, this sentence expresses that if there existed a unicorn, John would kick it.

(42) John would kick a unicorn.

In the introduction, we saw that the modal *would* can establish modal subordination as well. Roberts (1989) argues that in the case of modal subordination, a contextually salient proposition must be accommodated as the antecedent of the subordinated *would*-clause. She captures this in DRT. The core of her and Schueler’s analyses is similar. For reasons of space, I will only explore how Schueler’s account, couched in situation semantics, can be applied to the contextual counterfactuals. I leave a comparison of the two approaches for future research.

As already mentioned, the following subsections discuss two aspects of the verbal marking in the contextual counterfactuals. In section 4.2., I discuss Schueler’s (2008) work on implicit conditionals. Before that, in section 4.1., I want to consider the counterfactual marking in contextual counterfactuals. I discuss Karawani’s (2014) model of counterfactual conditionals cross-linguistically. This model can flexibly be applied to different strategies for marking counterfactuality. For the present paper, Karawani’s work is of interest, because she discusses the combination of different markers of counterfactuality. Obviously, there are many more accounts of counterfactuality, but I can only discuss a very small selection.

#### 4.1. Karawani (2014)

Karawani (2014) analyzes future counterfactual conditionals cross-linguistically. She distinguishes between several strategies that languages employ to mark counterfactuality. Some languages have a marker whose sole function is to mark counterfactuality (e.g. Hungarian); others rely on tense morphemes (e.g. Greek); and others combine these strategies (e.g. Zulu) (Karawani 2014:92-98). Strictly speaking, Karawani’s model might be considered unsuitable for the present purposes, as we are not solely concerned with future counterfactuals. However, as was shown in section 2.2., the marking for future counterfactuals is similar to the past counterfactuals (especially for Dutch), which makes it worthwhile to explore Karawani’s proposal.

An important ingredient of Karawani’s analysis of counterfactuals builds on her work with Zeijlstra on the Palestinian morpheme *kaan*. This morpheme can mark past tense as well as counterfactuality. Karawani and Zeijlstra (2013b) propose that this morpheme comes with a non-actual veridicality (NAV) presupposition, which is based on work by Iatridou (2000). This presupposition is stated in (43).

(43)  $\llbracket \text{NAV} \rrbracket \phi(w, t)$  presupposes that  $\exists w, t. [\langle w, t \rangle \neq \langle w^0, t^0 \rangle \wedge \phi(w, t)]$  (Karawani and Zeijlstra 2013b)

The NAV presupposition is satisfied if the proposition it takes scope over is taken to be untrue in the actual world or at the actual time. So when used as a past tense marker, the morpheme *kaan* signals that the depicted time  $t$  does not equal the present time  $t_0$ . When it is used as a mood marker, it indicates that the actual world  $w_0$  is not part of the worlds in which the proposition denoted is taken to be true. NAV thus can account for different uses of tense markers. It should be noted, however, that with the definition in (43), the NAV presupposition holds for all modal or temporal markers that exclude either the actual world or time. We will return to this matter

later.

For English, Karawani argues that it employs a mixed strategy, based on the pair in (44). For (44-a), she suggests that the NAV morphology is employed to express past tense. Thus, no counterfactual interpretation arises here. In (44-b), the modal *would* is also present, which can enable a counterfactual reading here.

- (44) a. If there were cookies, they ate them. Indicative  
 b. If there were cookies, they would eat them. Counterfactual (Karawani 2014:139)

However, this does not mean that every English proposition involving *would* and a NAV morpheme suffices to get a counterfactual reading. Karawani argues that for instance (45) only gets a counterfactual reading if the right temporal information is contextually specified or specified in the proposition, by e.g. *tomorrow*. Without such additional information, (45) can be read as a future in the past, i.e. not necessarily as a counterfactual, since NAV morphemes can also denote tense it does not have to contribute to the counterfactual marking.

- (45) If she had the time, she would go to the garden and pick some apples for the pie.  
 (Karawani 2014:139)

Karawani couches her analysis of counterfactual conditionals in a dynamic semantics, where the point of departure is the information state *s* a speaker or hearer has. Karawani's definition is shown in (46).

- (46) A state *s* is a triple  $\langle W, K, E \rangle$ , where (Karawani 2014:168)  
 i. *W* is a nonempty set of worlds  
 ii. *K* and *E* are nonempty subsets of *W*, such that  $\emptyset \neq E \subseteq K$

Since Karawani focuses on future counterfactual conditionals, she defines the sets as such. Suppose *W* contains the worlds that denote what the actual world might look like in the future. Then the set *K* is the subset of future worlds, which are consistent with one's knowledge. Based on his/her knowledge, a speaker might find some worlds more likely than others. The worlds that the speaker expects to become true more than others are those in *E* (Karawani 2014:168). It not quite clear to me what kind of formal mechanism sets apart worlds that are consistent with one's knowledge from those that one expects to become true. I leave this for future research.

Now, Karawani distinguishes between "singly" marked and "doubly" marked counterfactuals. The singly marked counterfactuals contain one marker that leads to a weak counterfactual reading, in which the antecedent is considered unlikely, as shown in (47).<sup>8</sup> The doubly marked counterfactuals contain an additional grammatical marker. This double marking leads to a stronger counterfactual reading, in which the antecedent is considered false; see (48).

- (47) I don't know whether John will come to the party, but if he came, he would have a great time. (Karawani 2014:167)  
 (48) John will not come to the party tonight. Too bad. If he had come, he would have had a great time. (Karawani 2014:167)

<sup>8</sup>Karawani notes that Iatridou (2000) made a similar suggestion on the singly marked counterfactuals. I refer the reader to Karawani (2014) for an extensive discussion of the literature.

Karawani argues that singly marked counterfactual conditionals are only defined if the antecedent of the conditional is not part of  $E$ . For doubly marked counterfactual conditionals, she argues that they are only defined if the antecedent is not part of  $K$ . Karawani’s definitions are shown in (49). Figure 2 illustrates them.

- (49) For a conditional  $\phi \rightarrow \psi$ , if it is (Karawani 2014:167)
- a singly marked conditional it is defined only if  $E \cap [\phi] = \emptyset$
  - a doubly marked conditional it is defined only if  $K \cap [\phi] = \emptyset$

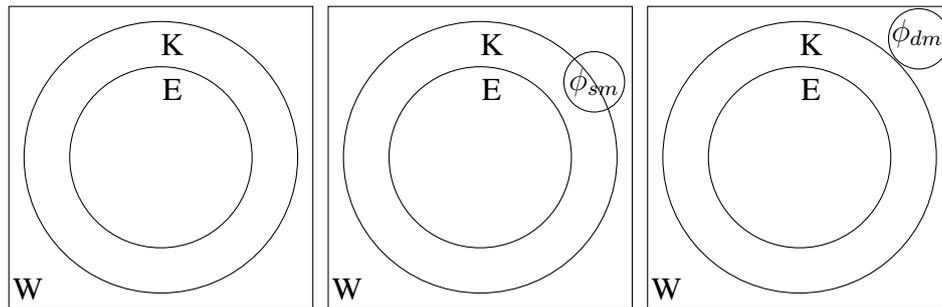


Figure 2: Karawani’s model (on the left), with the singly marked counterfactuals (in the middle) and doubly marked counterfactuals (on the right) (Karawani 2014:169-170).

Note that there is no ‘hard constraint’ as to what counts as a marker of counterfactuality in this framework. Karawani discusses NAV morphemes, mood markers, movement strategies and modal verbs such as *would*, among other markers. Thus, many different ways of marking counterfactuality can be accommodated in Karawani’s model. The downside, however, is that this could overgenerate in the sense that it seems to be difficult to exclude certain modal or temporal markers as counterfactual ones. The present study leaves this matter for future research.

To see how Karawani’s model fares with the contextual counterfactuals under discussion here, let us first take a look at the verbal marking. The Dutch data is repeated in (50); the German data in (51).

- (50) A: Jan heeft gisteren niet gewerkt.  $\equiv \neg\phi$   
 Jan has yesterday not worked  
 ‘Jan didn’t work yesterday.’  
 B: Dat <sub>$\phi$</sub>  zou raar zijn #(geweest).  
 that MOD strange be been  
 ‘That would have been strange if he did.’  
 B’: Dat <sub>$\phi$</sub>  was raar \*(geweest).  
 that was strange been  
 ‘That would have been strange if he did.’
- (51) A: Hans hat gestern nicht gearbeitet.  $\equiv \neg\phi$   
 Jan has yesterday not worked  
 ‘Jan didn’t work yesterday.’  
 B: Das <sub>$\phi$</sub>  wäre komisch \*(gewesen).  
 that MOD strange been  
 ‘That would have been strange if he did.’

It seems that Karawani can account well for the past tense marking used in the contextual counterfactuals above. Note that in the contextual counterfactuals, negated information is targeted and thus the proposition referred to by *dat* or *das* is inconsistent with the information state of the speaker, that means that Karawani expects them to be doubly marked. The data in (50) show that in targeting  $\phi$ , Dutch needs a modal verb and the past participle *geweest*. The past tense *was* can also be used, but only in combination with *geweest*. In Karawani's model, this can be analysed as a combined (a modal and a NAV morpheme) and temporal strategy (two occurrences of a NAV morpheme), provided that the Dutch past tense indeed bears such a presupposition.

For the German data in (51), we see that the subjunctive marker, *wäre*, is used, as well as the past participle *gewesen*. These could thus be said to be doubly marked. For the past participle, in Karawani's model, one would have to claim that it bears a NAV presupposition, in order for it to have a counterfactual use. As we saw in section 2.2, the German simple past cannot be used in the same way. A question that arises is why these two past forms differ and why one should bear a NAV morpheme whereas the other does not. I will leave this issue for future research. Still, we see that as predicted by Karawani, both languages employ two markers to target the non-negated proposition with the propositional anaphors.

If we turn to the use of the modal particles in contextual counterfactuals, it seems less clear how Karawani's analysis can apply. In section 2.3, we saw that in contextual counterfactuals the use of *zouden* in combination with *ook* suffices to refer to a proposition in the scope of negation, although the presence of the past participle would be preferred somewhat; see (52B).

- (52) A: Jan heeft gisteren niet gewerkt.  $\equiv \neg\phi$   
 jan has yesterday not worked  
 'Jan didn't work yesterday.'  
 B: Dat <sub>$\phi$</sub>  zou ook raar zijn.  
 that MOD OOK strange be  
 'That would have been strange, if he did.'

Since the constraint on what counts as a marker for counterfactuality seems to be quite lenient, from Karawani's perspective, it might be possible to argue that *ook* is the kind of modal marker that contributes to the counterfactual marking. However, this seems very unlikely on the basis of what we said in section 3. There, it was argued that *ook* and *auch* mark that a speaker already took the previous proposition to be true, based in his/her knowledge, whereas the markers in Karawani (2014) mark unexpectedness and inconsistency with knowledge. So it seems unlikely that *ook* and *auch* play a role in Karawani's marking model.

Furthermore, response B in (52) as well as the German data on the future in (14) seem problematic for Karawani. Because in these examples, there is only one counterfactual marker: in (52B) this is *zouden* and in (14B) this is *wäre*. Thus the counterfactual is a singly marked one. Nevertheless, the information targeted by the propositional anaphor is negated in the discourse, i.e. it is inconsistent with the knowledge of the speaker in the counterfactual interpretation that we are after. However, Karawani suggests that speakers can felicitously use singly marked counterfactuals instead of doubly marked ones if they make it explicit that they take the antecedent to be false. She provides the example in (53).

- (53) I know he's not coming back. If he were coming back, Mommy wouldn't be crying.  
 (Karawani 2014:170)

Perhaps the modal particles fulfill a similar role in cases like (52B) and (14B). It was argued that the particles here signal that the speaker already took the negated proposition to be true. One could hypothesize that this licenses a weaker counterfactual marking.

To conclude, we see that the Dutch and German verbal marking in contextual counterfactuals seems to generally fit the cross-linguistic pattern sketched by Karawani. However, the question why these specific markers, especially the past participles, are required in these constructions remains for future research.

#### 4.2. Schueler (2008)

Schueler (2008) discusses several kinds of ‘implicit conditionals’. As we saw at the beginning of section 4, these are propositions which are interpreted as conditionals but lack an antecedent; see for instance (54):

- (54) a. John would kick a unicorn.  
b. John would kick the unicorn.

Example (54a) has the reading that if a unicorn existed, John would kick it. (54b) has the reading that if the (mentioned or salient) unicorn existed, John would kick it (Schueler 2008:35,62). This section gives a brief overview of the aspects of his analysis that are relevant for the present purposes and shows how the analysis can be applied to the contextual counterfactuals.

Schueler builds his analysis on work by Lewis and Kratzer on counterfactuals, and couches it in Kratzerian situation semantics (Kratzer 1989). Situations are parts of possible worlds and worlds are maximal situations. That is, situations can be parts of one another. Furthermore, he assumes that there are situation pronouns in the syntax and that nouns and verbs take such pronouns as arguments. For instance, nouns are type  $\langle s\langle e,t \rangle \rangle$  instead of  $\langle e,t \rangle$ , and intransitive verbs are type  $\langle e\langle s,t \rangle \rangle$  instead of  $\langle e,t \rangle$ . Therefore, every noun or verb must take a situation variable as its argument; (55) illustrates this for *unicorn*:

- (55) a.  $\llbracket \text{unicorn} \rrbracket = \lambda s \lambda x. x \text{ is a unicorn in } s.$  (Schueler 2008:22)  
b.  $\llbracket s_{\langle 2,s \rangle} \rrbracket^g = g(2,s)$  (a situation pronoun with an index)  
c.  $\llbracket s_{\langle 2,s \rangle} \text{ unicorn} \rrbracket^g = [\lambda s. \lambda x. x \text{ is a unicorn in } s](g(2,s)) = \lambda x. x \text{ is a unicorn in } g(2,s)$

The noun phrase in (55c) is only felicitous if there is a unicorn in the situation specified by the assignment function, i.e. the situation it assigns to:  $\langle 2,s \rangle$  (in Schueler’s framework, assignment functions take a pair consisting of an index and a type, which allows for multiple types of pronouns). Schueler assumes that a covert operator  $\beta$  (based on an operator proposed in Buring 2004) binds situations (see Schueler 2010).

In his account of the counterfactuality of utterances like (54), Schueler proposes that there is a silent conditional operator [COND]. He suggests that *would* syntactically agrees with this operator. [COND] is basically a universal quantifier over worlds. It relates propositions to each other, such that if some proposition  $\phi$  holds in one set of worlds,  $\psi$  also holds in this set of worlds. A definition is given in (56) (the concepts *ClosestSituations* and *min* are discussed below).

- (56)  $\llbracket \text{COND} \rrbracket = \lambda p. \lambda q. \lambda w. \forall s [\text{ClosestSituations}(\text{min}(p))(w)(s) \rightarrow \exists s' [s \leq s' \wedge q(s')]]$  (Schueler

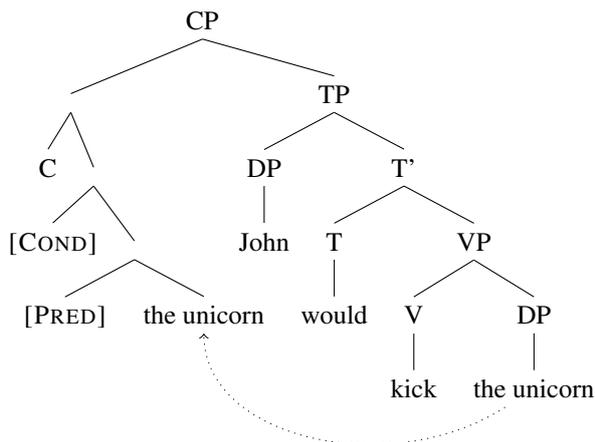
2008:33)

The function described in (56) takes two propositional arguments and a world argument. Roughly, it is defined if the set of situations denoting the first proposition is extendable to the set of situations denoting the second proposition. This means that each minimal situation in which  $p$  holds should be extendable to a situation in which  $q$  holds as well. The operator *min* picks out the minimal situations that describes a proposition  $p$ , such that there is no smaller situation in which  $p$  holds as well. In order to understand *ClosestSituations*, we must first take a look at Schueler's idea of *ClosestWorlds* in (57a). Relative to a proposition  $p$  and a world  $w$ , (57a) returns the set of worlds in which  $p$  holds that are maximally similar to the world  $w$ . This idea of similarity is based on Lewis's treatment of counterfactuals. Similarity ensures that the conditional only quantifies over worlds that are maximally similar to the world of evaluation. Going back to Schueler, similarity of worlds is applied to situations; (57b) illustrates this (for more details on this step, the reader is referred to Schueler (2008:32-33)).

- (57) a.  $\text{ClosestWorlds} = \lambda p. \lambda w. \lambda w'. p(w') \wedge \neg \exists w'' [p(w'') \wedge w'' \neq w' \wedge \text{closer}(w, w'', w')]$   
 b.  $\text{ClosestSituations} = \lambda p. \lambda s. \lambda s'. \exists w' p(s') \wedge s' \leq w' \wedge w' \in \text{ClosestWorlds}(p)(W(s))$   
 (Schueler 2008:32)

As mentioned, it is Schueler's goal to account for implicit conditionals, such as those in (54). Since implicit conditionals with a definite DP (as in (54b)) are more similar to contextual counterfactuals, I will focus on these. For such constructions, Schueler proposes two possible analyses. The tree in (58) provides us with the basic structure of the first analysis, for which he argues that it can also account for implicit conditionals involving indefinite NPs. In the antecedent in (58b), we see the conditional operator and a property called [PRED].

- (58) a. John would kick the unicorn.  
 b. (Schueler 2008:40)



In (58), *the unicorn* moves sideward out of the verb phrase of the consequent into the antecedent of the conditional (cf. Nunes 2004). In the antecedent, [PRED] is applied to the DP. [PRED] is like a pronoun, as it can get different denotations depending on the context. In case of (54), Schueler suggests that [PRED] denotes the property of existing, see (59):

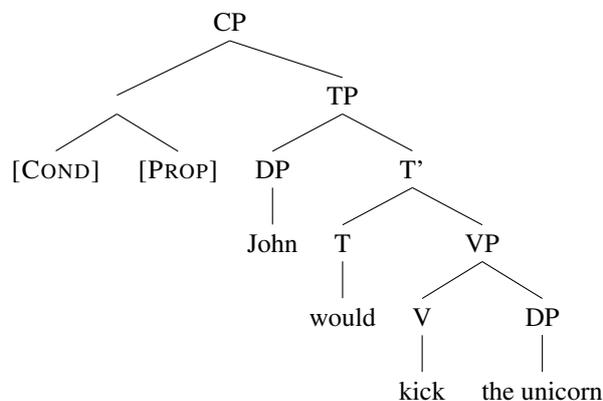
- (59)  $\llbracket \text{PRED} \rrbracket = \lambda x. \lambda s. x \text{ exists in } s$  (Schueler 2008:35)

At LF, *the unicorn* is interpreted both in the antecedent and in the consequent of the conditional, giving rise to the reading *if the unicorn<sub>i</sub> existed, John would kick it<sub>i</sub>*.

According to Schueler, this structure is not problematic for an implicit conditional such as *John would dance with the debutante*, for which [PRED] would denote the property of being encountered by John. Yet for (58a), he argues that it might be problematic. As mentioned, Schueler claims that [PRED] in (58a) denotes the property of existence. He suggests that the resulting presupposition of the antecedent, that the unicorn exists, might conflict with the counterfactual morphology, which presupposes that the antecedent is false and thus, that such an entity does not exist. To deal with cases like (58a), Schueler considers an alternative structure, which is of interest for the present purposes, see (60). The alternative structure does not involve [PRED]. The conditional simply selects a contextually salient proposition as its antecedent. This proposition must satisfy the presuppositions of the definite article (Schueler 2008:68).

(60)

(cf. Schueler 2008:68)



According to Schueler, the antecedent for the structure in (60) must be a salient proposition in the context. For the example with the debutante, he proposes that it is preceded by for instance the propositions in (61):

(61) There could be a debutante at the party that John is going to. I wonder what would happen if so. (Schueler 2008:68)

In (61), it is suggested that it is possible that there is a debutante at the ball. This proposition can form the antecedent of the conditional. Furthermore, Schueler provides the example shown in (62), in which the antecedent of the conditional must be the proposition that takes scope below negation.

(62) a. There will be no debutante at the ball.  
b. (That is a shame.) John would have danced with the debutante. (Schueler 2008:70)

The dialogue in (62) is very similar to those involving contextual counterfactuals. Schueler notes that the additional tense marking in (62b) is needed since the antecedent of the conditional takes scope below negation in the discourse, but he does not discuss this any further.

The question now arises which of the two alternatives Schueler proposes is more suitable for the contextual counterfactuals. Anaphors like *dat* and *das* are mostly assumed to presuppose that there exists an antecedent for them to target. It is unclear to me why such anaphors would need to rely on [PRED], and if they did, what sort of property [PRED] would denote. Schueler's second

alternative does not run into this complication because there is no [PRED] in this structure. Therefore, this analysis seems preferable.

For the contextual counterfactual constructions in Dutch, one could say that *zouden* either bears a function like [COND] or syntactically agrees with it. The same is then expected to hold for certain uses of the Dutch simple past tense in combination with the past participle, which could be used in contextual counterfactuals as well. The consequences of such an assumption should be investigated in future research. Note that in this analysis, the propositional anaphor in the consequent of the conditional strictly speaking refers to the conditionals' covert antecedent, which denotes the contextually salient proposition.

Now, in the readings that we are after in the contextual counterfactuals, the anaphors all target the proposition below negation. For this, just as in Schueler's example (62b), we need an additional marker in Dutch and German. Note that, when we step aside this issue with the past participles, Schueler's proposal seems to work well for (62b). This utterance, in combination with *that is a shame*, can only take the non-negated proposition *there will be a debutante at the ball* as its antecedent. If the negated proposition would form the antecedent of the implicit conditional in (62b), we would end up with a contradiction (since we know that if there is no debutante at the ball, John cannot dance with a debutante). For the contextual counterfactuals without modal particles, however, there are not enough lexical items to strongly disambiguate between the two possible propositions that can occur in the antecedent of the conditional. It is possible for the responding person to consider the non-negated or the negated proposition surprising or strange. Therefore, the modal particles are helpful here. When these are present, the hearer is forced to assume that the speaker thinks that the previous proposition is true (based on the presupposition of *ook* and *auch* spelled out in section 3). If the *negated* proposition were taken to form the antecedent of the conditional, such that propositional anaphors refer to it, the presupposition of the modal particles and that of the counterfactual marking would clash. The particles indicate that the speaker takes the previous utterance to be true, whereas the counterfactual markers indicate that the speaker does not believe that the referent of *dat* or *das* is true. Therefore, the listener is forced to assume that the *non-negated* proposition is the antecedent of the conditional and thus the referent of the propositional anaphor.

Although there are still many open questions, it seems that the structure in (60) provides a fruitful direction for future research. One key question that remains to be answered is why the past participles are required to mark counterfactuality in both Dutch and German, as well as in English, in Schueler's example. Karawani (2014) argues that this fits a cross-linguistic pattern, but we have not yet been able to explain why the past participles are used in this way. This issue should be investigated in future research, which should take into account other approaches to the verbal marking in counterfactual constructions.

## 5. Conclusion

The present study investigated contextual counterfactual constructions. It gave an overview of contextual counterfactuals in Dutch and German and showed how the Dutch and German modal particles *ook* and *auch* influence their felicity and interpretation. The main contribution of this paper is the formal analysis of the modal particles in the framework by von Stechow and Gillies (2010). I argued that the particles indicate that the previous proposition was already 'directly settled' before it was uttered, by the speaker's modal base, which was determined by the kernel.

In contextual counterfactuals, the particles thus signal that the speaker already took the negative assertion to be true. This analysis can account for the use of the modal particles in the contextual counterfactuals as well as the other uses of these particles discussed in section 3. Moreover, the paper discussed the use of tense and mood markers in contextual counterfactuals. The cross-linguistic account of counterfactuality by Karawani (2014) was discussed. This account made the correct predictions with regard to the preference of the double marking on contextual counterfactuals. It also showed how such constructions fit a cross-linguistic pattern. However, there also were some issues concerning this account that were left unresolved. Furthermore, it was shown that Schueler’s account of implicit conditionals provides a framework that the contextual counterfactuals can be analyzed in. The details of this analysis should be worked out in future research. Besides that, the need for the past participles in the contextual counterfactuals remains to be investigated in future research.

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### Abbreviations

DAT	dative
INTERJ	interjection
MOD	modal
NAV	non-actuality veridicality
SBJV	subjunctive

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# Categorisation and the negotiation of similarity and difference

## Identity construction in expatriate blogs

Linda Walz

### *Abstract*

Expatriates are individuals who have moved abroad and settled into a new sociocultural environment. Many keep a personal blog, in which they reflect on their experiences and in the process engage in identity construction. Whilst online directories list a multitude of expatriate blogs, little research has examined how identity is linguistically produced in such sites. Adopting a sociocultural linguistic approach, this paper investigates identity construction in twelve expatriate blogs written in English through membership categorisation analysis (Sacks 1992) and the similarity dimension of tactics of intersubjectivity (Bucholtz & Hall 2004a,b). Key features are being a person in transition, adopting English practises and portraying relocation as a shared experience.

### *1. Introduction*

A person's identity can be understood to encompass the way they construct and portray themselves in relation to and in interaction with others. It is therefore an inherently relational domain. Whilst individuals may think of their identity as a stable core residing within themselves, changes to their environment or living situation may result in the self being perceived as changed, and in the need to express their thoughts and experiences. One site where such identity construction and negotiation happens is blogging. A personal blog is a space which can serve individuals to express their own reflections (Technorati 2010). This may take any aspect of identity as its focus, such as illness (Page 2012; De Boer & Slatman 2014), weight-loss (Leggatt-Cook & Chamberlain 2012), national identity (Rulyova & Zagibalov 2012), or the aspiration to cosmopolitanism (Snee 2014). The type of personal bloggers that this research focuses on are individuals living in a foreign country, who self-identify as *expatriates* or *expats* by having their blog included in an online expatriate blog directory. They have moved away from their country of origin and are living abroad for an extended period of time or potentially indefinitely. Such individuals can be thought of as people in transition, moving not only physically from one country to another, but also making a transition in terms of their cultural and linguistic surroundings, as well as their social group

and stage of life. This research examines how in such a phase of transition a person's identity is linguistically constructed and expressed.

Expatriate blogging is a widespread phenomenon, with online directories listing a multitude of such sites. Nevertheless, little research has examined how identity is linguistically constructed in blogs written by foreign nationals about living abroad. This study addresses this issue by investigating expatriate blogs through an exploratory application of two different approaches: membership categorisation analysis (henceforth MCA; Sacks 1992) and one element of tactics of intersubjectivity (henceforth Tactics; Bucholtz & Hall 2004a,b). This promises new insights into expatriate identity construction from a linguistic point of view, contributing to recent research on identity construction in various social media (Page 2012) and thus furthering an understanding of how online identity is linguistically produced. Furthermore, an examination of expatriate identity as negotiated through personal blogs can inspire participants and their audiences to see their own practices in a new light, which may promote self-reflection as well as engender mutual appreciation of expatriates and locals. At the same time, this study may broaden the understanding of identity in transition more generally, both within and beyond academia. Finally, the application of two different frameworks explores their compatibility and potential for expansion and thus aims to contribute to discussions of how identity can be theorised and investigated.

This paper is structured as follows. In section 2, an overview of the expatriate blogosphere will be provided. Section 3 will then discuss the sociocultural linguistic understanding of identity that is adopted in this research, as well as prevalent studies on expatriates and blogging in relation to the linguistic construction of identity. In section 4, this discussion of the research background will be succeeded by an outline of the methodologies employed in this research, MCA and Tactics, including reflections on their suitability and compatibility. Section 5 describes the data for this research, how it was collected and where the focus for the analysis lies. The final two sections provide an analysis and discussion of categorisations pertaining to being a person in transition and linguistic means employed to construct identity through establishing similarity and difference in the blog posts.

## 2. *The expatriate blogosphere*

Moving and living abroad for a longer period of time is a common phenomenon nowadays. According to the UK Office for National Statistics, in the year ending in March 2016 633,000 people immigrated to the UK, of whom 282,000 were non-EU citizens. There are several reasons why a person may relocate abroad long-term. In the above time frame, the most commonly stated reason was work-related (303,000 people), followed by study (164,000), and accompanying or joining others (80,000) in third place (Office for National Statistics 2016). These migration statistics apply to who the United Nations define as a *long-term international migrant*: 'A person who moves to a country other than that of his or her usual residence for a period of at least a year (12 months), so that the country of destination effectively becomes his or her new country of usual residence' (United Nations 1998:10). However, given the prevalence of migration and the various reasons for which it is undertaken, it is not surprising that there exist a number of different terms to describe people who move abroad long-term, one of them being *expatriate*. Expatriates tend to fall into the first or third category discussed above, moving either for work or to accompany or join others. However, some individuals are not easily categorised in terms of their motivations, as they may relocate for instance in order to join another person as well as further their studies.

In this research, then, *expatriate* or the short form *expat* is used synonymously to *long-term international migrant* to refer to a foreign national who has moved to a different country for the purpose of living there for an unspecified amount of time, but extending beyond one year. Two elements are thus crucial: rather than being born abroad, the person has moved there in the course of their life; and whilst the length of time spent abroad may not be clear to individuals themselves, it is certainly more extensive than a few months or a year spent on an exchange programme or work placement, with individuals living abroad for several years, and potentially indefinitely.<sup>1</sup>

The term *expatriate* denotes a form of privileged migration, and as such it is occasionally associated with negative connotations and seen to encompass the superiority of certain types of foreign nationals as opposed to terms like *migrant* or *immigrant* (Koutonin 2015). However, through the inclusion of their blogs in so-called expatriate directories the participants of this study can be seen as either self-identifying with the term *expatriate*, or at least not opposing it. Other terminology pertaining to global mobility, such as *migrant* or *immigrant* is scarcely used on such sites, and *expatriate* is adopted in the blogosphere and on social network sites such as *InterNations*<sup>2</sup> to refer to individuals of any nationality living in any other country. In this study, then, *expatriate* is taken to apply to any foreign national living abroad for longer than one year and is as such free of negative connotations.

The extent of this phenomenon becomes clear when examining resources on the Internet. There is a wealth of websites dedicated to giving advice and support to people who are planning to move abroad or have already done so. Several of those websites however provide much more than just information: they are community-building. For instance, websites allow users to sign up and engage in discussion via forums or private messaging with other users living abroad. A specific type of engagement is reading blogs, as will be explained below.

Upon moving abroad, several individuals have been found to begin a blog, with a declared purpose of documenting their experiences abroad and keeping friends and family informed. They have the option to include their blog in a directory, a website which lists blogs according to certain criteria, adding some descriptive information and linking to the blog, so that interested readers can find and access it. For blogs written by foreign nationals living abroad there exist a number of expatriate blog directories that provide lists of similar blogs. These are usually ordered according to country of residence, and sometimes also provide information about a blogger's home country. This then makes it possible for interested readers to identify blogs that are relevant to them and to do so by searching by country. Bloggers listed in the directories in turn display a badge on their blog that links back to the directory. It can thus be argued that they self-identify as expatriates, associating their blogging with the practice found in several blogs written by foreign nationals.

Indeed, the expatriate blogosphere can be regarded as an online community of mutual readers who share their blog and thus virtually partake in the blogger's everyday life. Not only do they include links to other expatriate blogs in the sideline of their blog, the blogroll, but statements in the blog posts as well as in the comments section show that bloggers mutually read each other's blogs and may choose to leave a comment.<sup>3</sup> There is thus a notion of going through a shared experience when moving and settling in abroad, regardless of one's

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<sup>1</sup> It can be argued that the uncertainty regarding the extent of time spent abroad is a feature common to many expatriates' experiences.

<sup>2</sup> Available at: <https://www.internations.org>. Accessed on: 02/06/2016.

<sup>3</sup> This potential of blogs to function as a community was equally identified by Leggatt-Cook & Chamberlain (2012) in the case of the weight-loss blogosphere.

origin and even across different countries of residence and entirely different reasons for having moved abroad.

The size of the directories and the fact that they add an ever increasing number of blogs to their site indicates that keeping a blog when living abroad is a common phenomenon. Why this may be the case will be examined below.

Several expatriate bloggers mention their reason for blogging in their first post, or in their introductory statement, the *about* section. Upon moving abroad, many aim to stay in touch with their family and friends by sharing their life abroad with them and document their thoughts and experiences. However, several bloggers at a later stage comment that they have found a community in the blogosphere and have made new friends. An example of this is the following extract from a bloggers' reflections after one year of blogging.

- (1) I began my blog with a specific goal of keeping my family and friends updated on my travels last year while I was going back and forth across the ocean primarily between England and America. What began as a way to stay in touch with folks in the U.S. evolved very quickly into something more to me. [...] If you've been reading my blog for any length of time these will not be new stories to you...you've already been a witness. Many of the 19,260 plus views have been silent witnesses choosing not to comment and that's okay... just stopping by is truly appreciated. To those of you who left messages of hope and support after reading certain posts or who joined me in the celebrations of the last year...I want to say thank you to you all. You've been wonderful and so appreciated and I am thrilled to have formed new friendships through this now familiar medium. Whether we're telling our individual stories or listening to someone else's we are a witness...of good times and bad, hope and heartbreak, joy and discovery, and sometimes when we're lucky, healing. [Claire]<sup>4</sup>

Despite this community-building potential, a blog is also a personal space. It is usually created and maintained by one individual, who has control over its look and contents. This is the case for blogging much more than for a profile on a social media platform like *Facebook* or *Twitter*, where individuals have limited control over what content they see and where their own contributions may be overlooked in the wealth of data being generated. Blogging, in contrast, offers individuals control over their space, not only regarding their own posts, but often also regarding the comments they receive, as bloggers can choose to approve of content first before it gets published, and can choose to block unwelcome contributions. Furthermore, the blog focuses on their experiences and allows them to publish much longer contributions than social media platforms would. Personal blogs like the ones written by expatriates can thus be seen as online places of the self, where individuals reflect about their experiences and share their thoughts with interested readers.

Such places of the self created when moving abroad are dynamic sites in terms of identity. The relationship between the move abroad, expatriates' identity and their blogging is visualised in Figure 1.

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<sup>4</sup> All bloggers' names are pseudonyms.

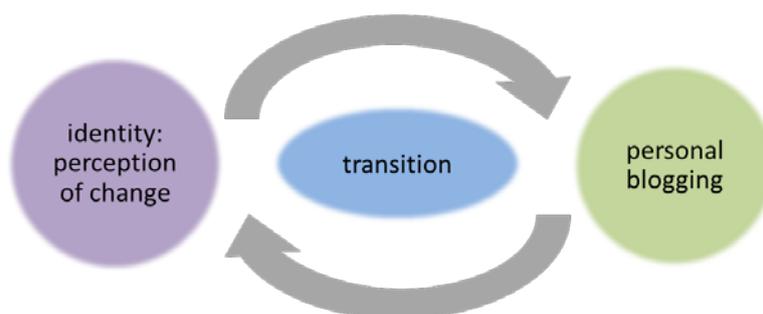


Figure 1. Relationship between transition, identity and personal blogging.

Expatriates can be seen as individuals undergoing transition: the move from one country to another entails not only a physical move from one location to another, but also a change in terms of sociocultural and linguistic environment as well as personal living situation and routine. Experiencing this may lead individuals to perceive themselves as undergoing change, by adapting to their new living situation, learning about another culture, or perceiving some form of personal growth. This perception of change may then result in the need to share one's experiences to document and reflect on them and their impact of the self, and the expatriate bloggers in this study do so through what can be broadly termed personal narratives. This includes descriptions of their daily life abroad, documentation of trips, anecdotes of incidents or reflections and comparisons of their home and country of residence. These narratives, in turn, may feed back into how expatriate bloggers see themselves and their environment, thus establishing a cyclic relationship between identity and narratives or more broadly language use in general. Expatriate blogs are thus an environment rich with identity construction and conducive to the study of how identities are achieved linguistically.

### 3. Identity and personal blogging

This research conceptualises identity in terms of what Bucholtz & Hall (2005) have termed the sociocultural linguistic approach, which defines identity as '*the social positioning of self and other*' (Bucholtz & Hall 2005:586, original emphasis). It encompasses five principles outlining their understanding of identity. The first two principles are concerned with how identity can be understood ontologically. The principle of *emergence* emphasises that identity is not inherent in an individual like a stable core, but that it is instead produced in and emerges through interaction with others. Identity is thus not what a person is or has, but originates from what a person does when engaging with other people.

Similarly, the principle of *positionality* maintains that this emergence happens on different levels simultaneously, both with regard to macro-level categories such as nationality or gender and on the local level of specific interactions and the positions and roles that are adopted therein.

The principle of *indexicality*, then, is concerned with the constitution of identity, how it is produced through indexicality, which is the establishing of relationships between linguistic elements and social meanings. This can be done through the explicit mentioning of identity categories such as membership categories (Sacks 1992), but also through more subtle stances such as presupposition or evaluation (Bucholtz & Hall 2005:594-595).

However, identity is not done by one individual alone but intersubjectively, which is encompassed in the principle of *relationality* through relations that Bucholtz & Hall detail

elsewhere (2004a,b) as *tactics of intersubjectivity*. These comprise the dimensions of similarity and difference, realness and power and will be discussed in Section 4.

From this understanding of identity as relational finally follows the principle of *partialness*. It acknowledges that because identity is constituted in interaction and in specific contexts through particular means, it is always partial rather than a unified whole. The authors stress that no analysis can thus capture the complex phenomenon of identity completely (Bucholtz & Hall 2005:607) and therefore encourage an interdisciplinary approach encompassing different methods. Sociocultural linguistics hence provides a label for the integration of various approaches and research fields such as sociolinguistics, conversation analysis, discourse analysis and linguistic anthropology in ‘an intellectual coalition for the study of language, culture, and society’ (Bucholtz & Hall 2008:404).

The sociocultural linguistic approach thus views identity as socially constructed in discourse and emergent in interaction. Identity is not a fixed core inherent in an individual, but is ever-changing and dynamic, shaped and reshaped in local contexts. However, Bucholtz & Hall (2004a) stress that whilst their approach conceptualises identity as constructed rather than inherent, essentialist notions cannot be discarded as long as they are seen to be relevant to participants. Thus, expatriate bloggers may perceive of themselves as individuals with a stable identity that undergoes some form of change in the process of their relocation, and it is this very perception of change to the self that may then result in bloggers’ personal narratives to negotiate and ascribe meaning to this experience. This process was visualised in Figure 1.

Having explained the conceptualisation of identity adopted in this research, the discussion will subsequently take into account a number of studies which have explored the connection between personal blogging and different aspects of identity. For instance, research has examined personal narratives of illness (Page 2012; De Boer & Slatman 2014) or weight-loss (Leggatt-Cook & Chamberlain 2012), in which individuals undergo a form of personal transformation or transition. Focusing on a different form of transition are studies examining the relationship between the self and the other when travelling or living abroad. For instance, in her analysis of blogs written by young British gap year travellers, Snee (2014) has shown that individuals on a gap year aspire to cosmopolitanism, stress the value of their experience and distance themselves from what they call *tourists*. However, the study focuses on the conceptualisation of taking a gap year as becoming cosmopolitan rather than on the actual construction of identity through linguistic means.

Research on expatriate blogs (Cappelli 2008) has examined a blog written by an American living in Italy in terms of their use of humour and irony. Cappelli found that the blogger produces a sense of hierarchy of individuals who are mobile, with expatriates constituting the highest-level category followed in descending order by seasonal residents, travellers and tourists. These findings resonate with the distinction that the bloggers in Snee’s (2014) study make between their own gap year experience and ‘common’ tourists.

Finally, Vora (2012) has investigated how expatriates, migrants and locals are produced in the United Arab Emirates English language blogosphere. She has found that expatriates produce belonging as residents through constructing themselves as central to the online community of the blogosphere whilst simultaneously distancing themselves from the nation. The above studies have thus explored links between individuals undergoing a form of transition and their identity construction in personal blogs. The debates about what kind of mobile person an expatriate is, the distinction from other forms of travellers and the values that are attached to this notion can be explored through the two frameworks discussed below.

#### 4. Membership categorisation and tactics of intersubjectivity

To investigate how identity is constructed in expatriate blogs, this research draws on two frameworks, membership categorisation analysis and tactics of intersubjectivity. This section briefly outlines the aim and background of both approaches, followed by a discussion of what makes them suitable to investigate identity construction in expatriate blogs.

MCA is an ethnomethodological approach and as such ‘an analytic mentality’, focusing on participants’ own understanding of their practices and methods as observable in the data (Housley & Fitzgerald 2015:6). It was first developed by Harvey Sacks (1992) and originates from his lectures. Its aim is to investigate how social order and structure are produced at the local level of interaction through participants’ own methods, such as social categorisation (Lepper 2000). It thus examines what categories interactants assign to themselves and others, how these are grouped into collections and what activities and predicates are associated with these categories. For instance, in relation to the studies on travellers, tourists and expatriates discussed above, MCA could illustrate how a person constructs category membership as a traveller as opposed to a tourist, and what activities and frame of mind they connect with this category as evident in the data. These might for example be features such as exploration, open-mindedness, or engaging with the local population. Whilst MCA has frequently been used to examine conversational data, such as extended turns in radio phone-in programmes (Housley & Fitzgerald 2002), it has also been applied to computer-mediated discourse such as chat room interactions (Vallis 2001) and rolling news media (Stokoe & Attenborough 2015).

The Tactics framework, in contrast, is an element in Bucholtz & Hall’s (2005) sociocultural linguistic approach to identity outlined above, and as part of the *relationality* principle it investigates the construction of identity in interaction through semiotic resources and processes, with a focus on linguistic ones. Whilst the approach has mainly been used in research on gender and sexuality (e.g. Bucholtz & Hall 2004b), it can also describe various other forms of identity work, nor is it limited to conversational data. For instance, recent research has drawn on Tactics to investigate how flight attendants construct identity in computer-mediated discourse (Clark 2013). The analytic flexibility of the Tactics framework is due to the conceptualisation of three different but overlapping and interacting dimensions: similarity and difference, (non)genuineness and (il)legitimacy. The tactics of *adequation* and *distinction* operate on the level of similarity and difference and comprise the extent to which participants highlight perceived similarities or differences between themselves and others. This is thus the classic dimension against which identity is often measured. However, the authors have incorporated two more dimensions into their framework in order to be able to capture the dynamic process of identity construction more fully: *authentication* and *denaturalisation* pertain to what identities are treated as genuine or are constructed as artificial, and *authorisation* and *illegitimation* focus on what identities are institutionally sanctioned or are denied legitimacy. Table 1 provides an overview of the two approaches as discussed above.

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	<i>MCA (Sacks 1992)</i>	<i>Tactics (Bucholtz &amp; Hall 2004a,b)</i>
Aim	describe members' own methods which produce social order and structure	examine how identity is constructed through semiotic resources and processes similarity and difference
Focus	collections, categories, predicates, activities	realness and artifice legitimacy and illegitimacy sociocultural linguistics, predominantly
Origin	ethnomethodology, developed alongside conversation analysis	applied in research on gender and sexuality

*Table 1. The frameworks compared.*

Both MCA and Tactics are suitable approaches to examine identity construction in expatriate blogs for a number of reasons. Firstly, both approaches are concerned with language use at the micro-level of specific interactions and the local production of identities through language. This allows for a close investigation of identities as produced in the context of single blog posts in line with a social constructionist understanding of identity. Additionally, as both MCA and Tactics examine unsolicited data and work towards uncovering individuals' own methods of creating identities, the approaches lend themselves for an investigation of the narratives produced by individuals undergoing a phase of perceived change to the self. A further advantage is how well the approaches can complement each other: category membership is a fundamental aspect of identity and may be used to highlight the boundaries between the self and the other, thus creating similarity and difference.

### 5. Data and method

The data for this study consist of personal blogs written in English by foreign nationals living in England. Two expatriate blog directories were surveyed in April 2015, yielding a sample of 187 blogs that were publicly accessible, live and authored by a single person. The sample was narrowed down to blogs containing narratives about life abroad in England written by individuals who were living there rather than staying temporarily for a study-abroad year or similar short-term commitments. A further selection criterion was for the blogs to have been begun with a focus upon relocation abroad, either with bloggers announcing the move and documenting their process of making the required arrangements, or by beginning their narrative with the actual move to England.

This selection process resulted in 30 blogs whose authors were contacted, and informed consent was obtained from 12 bloggers. Whilst blogs are publicly accessible, consent was sought because as outlined above this research views expatriate blogs as places of the self where individuals occasionally discuss very personal matters for which a researcher cannot be seen as the intended audience. Furthermore, as extracts from the blogs will be quoted verbatim, individuals may be identifiable through Internet searches, and this potential exposure constitutes another argument for obtaining their consent.

The data consist of all blog posts written from the onset of the blog up to one year after relocation to England. All posts are contained in the blog archives and were unsolicited and composed before bloggers were contacted. This allows this research to avoid the observer's paradox (Labov 1972) as well as any disturbance of individuals' current blogging practices.

The blogs are written by 10 Americans, one Australian and one New Zealander. Nationality was not a selection criterion, as this research studies how expatriate bloggers

construct their identity in their blogs when moving to England rather than focusing on a particular national group. However, the data mirror the distribution in terms of bloggers' nationality in the surveyed expatriate directories, where a majority of blogs are written by Americans, with Australians and New Zealanders also being strongly represented, as illustrated in Figure 2.

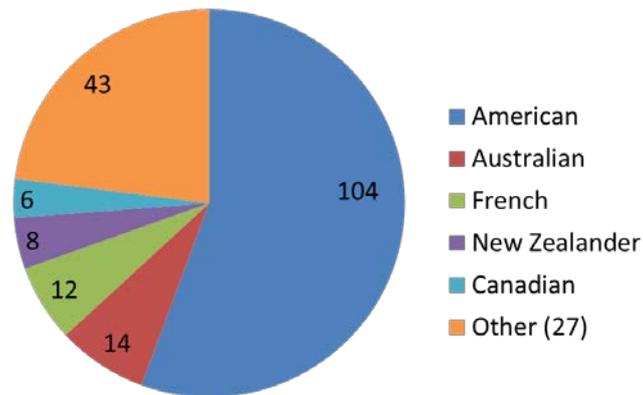


Figure 2. Nationalities of expatriate bloggers in England in the sampled directories (N=187).

The data can thus be seen as a reflection of the national constitution of the expatriate blogosphere. The focus of the subsequent analysis is on the first post in each of the 12 blogs.

## 6. Analysis

The first post in a blog has a special significance, as it is in this post that bloggers usually outline why they are starting a blog and what they will be writing about. All 12 expatriate bloggers mention that they are moving to England. It is thus worthwhile to study in more detail how this first contribution is achieved and what identities are invoked in the process. MCA allows for the close inspection necessary to answer this question by uncovering members' – the expatriate bloggers' – methods to accomplish the beginning of their narrative. To illustrate what MCA can reveal in terms of identity construction, this framework will in the following be applied to the first post in one of the blogs (2).

### (2) Hello world!

This blog entry's title is literal and figurative. Why, you ask?

My love for seeing the world began as a child. When adults would ask me what I wanted to be when I grew up, one of the things that I said was "a tourist". I read an atlas, had pen pals in Europe, Africa and South America, and thought about living abroad. Never in my wildest dreams did I think that I'd be "a tourist" when I grew up. I've not only visited those continents, I was crazy enough to pack up and move to one of those continents. Job opportunity and personal growth – what more can one ask for?

You'll have answers to that question, and many others, as you follow my journey from American dreamer to expatriate extraordinaire. Hello world! indeed.

On Twitter? Follow [username] for updates. [Aubrey]

Firstly, Aubrey's overt self-categorisation of herself as "*a tourist*" is noteworthy. As she points out, this identity is one she wanted to adopt in her childhood. However, this is portrayed as a child's dream, and Aubrey shows herself surprised that as an adult she has indeed attained this identity: *Never in my wildest dreams did I think that I'd be "a tourist" when I grew up.* The use of the quotation marks around the categorisation points to a deeper level of complexity. In the first occurrence, they may introduce the direct speech of Aubrey as a child, but they may also foreshadow the second occurrence, where they can be more readily understood as modifying the category in which membership is claimed. To understand this, it is necessary to examine the activities and other category-bound predicates that the blogger draws on.

Having a *love for seeing the world* is mentioned as a state of mind that describes the category *tourist*. Aubrey then goes on to exemplify how her love for seeing the world manifested itself: not only did she *read an atlas*, she also engaged with pen pals from different continents. These activities are portrayed as being in line with a tourist's desire to explore the world. However, she also *thought about living abroad*, which she mentions as a third element underlining her love to see the world. She thus includes another aspect of open-mindedness in her self-categorisation, which clashes with the perception of a tourist as somebody visiting a country rather than living in it. In her next paragraph, she makes clear that she is aware of this distinction by pointing out that she has not only met the criteria that classify her as a tourist – visiting those continents she dreamed about as a child – but has in fact moved to live abroad. This may explain her use of quotation marks in the second instance of overt categorisation, for as an adult she knows that moving abroad is not a typical tourist activity. She was *crazy enough* to go beyond merely visiting places to actually becoming a resident. The category *tourist* thus serves her to point to the extraordinariness of her situation.

She then goes on to explain her motivations for moving abroad, which again go beyond a regular tourist experience, as they suggest a more permanent change to her personal situation by starting a new job and also developing as a person. Both aspects are framed as a positive discourse of potential: getting an *opportunity* to work abroad as well as *growth* as a person, which implies a change for the better. This is reinforced by the rhetorical question *what more can one ask for?*, suggesting that this opportunity was too good to miss.

Finally, Aubrey suggests another change to her identity: She is on a *journey from American dreamer to expatriate extraordinaire*. She goes from dreaming about exploring the world to actually being an expatriate. In the process, she no longer portrays herself as *American*, but as *extraordinaire*, creating a playful effect through alliteration and at the same time reinforcing how *crazy* or special – extraordinary – her experience is. *Hello world!* is then indeed a greeting aimed at the world she is about to explore as well as at her readers who she invites to follow her *journey* and her ensuing narrative.

The analysis has shown how categorisations and their pairing with activities and predicates can be used to not only claim membership in one category, but also to expand this category or alternatively to show how the category and its predicates in their narrow understanding are surpassed and no longer fully applicable to oneself. At the same time, the extraordinariness of Aubrey's situation and her *journey* are constructed as worth sharing with readers. The way she draws on categories and predicates to portray her sense of identity and her experiences of moving abroad thus makes an important contribution to achieving her first blog post.

### 6.1. Being a person in transition

The categories and predicates uncovered above as well as similar ones also pervade the other first blog posts. What bloggers do in their first post can be broadly labelled as *being a person in transition*, emphasising the change of personal situation they are going through upon moving abroad. The following examples illustrate how bloggers accomplish this through a number of identity categories and associated predicates.

### 6.1.1. Entering a new phase in life

Several participants emphasise that they are persons entering a new phase in life, which is also alluded to in example (2) through the idea of *personal growth*. Examples (3) to (5) show how bloggers express this concept.

- (3) It was me wanting to introduce myself as me, as the girl about to embark on a very exciting chapter in her life. [Kim]
- (4) I am moving away from home, away from the beaten path where my life to date has led me and definitely beyond the range of my current experiences. [Megan]
- (5) Most of you are aware that in the last six weeks my life has changed dramatically, I've gone from having an American zip code to a post code found in the United Kingdom and a new living situation along the [county] coast of England. [Claire]

In example (3), Kim explicitly categorises herself as a *girl about to embark on a very exciting chapter in her life*, thus portraying herself as somebody at the edge of a new beginning. This new phase in her life is bound to predicates of excitement and adventure, evoked through her lexical choices of *very exciting* and *embark*. She signals that this is how she sees herself, and this is how she wants to introduce herself to her readers.

This discourse of adventure can also be found in example (4). In contrast to example (3), however, Megan constructs the new phase in her life as more daunting rather than exciting. She emphasises abandoning the familiar and venturing into the unknown: her move involves going *away from home, away from the beaten path where my life to date has led me and definitely beyond the range of my current experiences*. She thus categorises herself first and foremost as a person leaving her old life behind.

In example (5), finally, Claire starts her blog with a post looking back on her move abroad. She confirms that her *life has changed* and has done so *dramatically*, just as the bloggers in examples (3) and (4) anticipate. Not only has she moved physically from one location to another, and exchanged American zip code for British post code, but this has also entailed *a new living situation*.

The above examples show how the move to another country is characterised as a new beginning that has a big impact on the blogger's life. Predicates associated with the person who moves abroad evoke a discourse of adventure and change, be it in an exciting and positive or slightly daunting way.

### 6.1.2. Being mobile as a lifestyle

Another way of being a person in transition is placing emphasis on being mobile as a lifestyle, as an extract from another first post illustrates (see (6)).

- (6) We are far from experienced expats, tho we do feel like we are global nomads, and as we prepare for our 3rd move maybe we are. [...]

Our lives are made even busier with news that friends in Dublin are moving over summer; friends in Bournemouth moving to Dublin; Tokyo friends have recently landed in Texas, others in Canada, neighbors repatriated to USA, PTSA colleague repatriated to Brisbane, while others have returned to various European cities. It's been VERY busy and rather emotional.

Having just written where friends are coming and going from, I guess it's time to admit, we are living a true global nomadic life.

Who'd have guessed!?!?!?!?!? Not me that's for sure hehehehe  
[Emily]

Emily and her family are moving internationally for the third time, and she searches for a category that adequately describes them. She openly refutes being *experienced expats*, but emphasises feeling *like we are global nomads*. She then supports her feeling of being globally mobile by the fact that they are moving for the third time, reaching the tentative conclusion that *maybe we are* – although whether she means *experienced expats* or *global nomads* remains ambiguous.

Emily then portrays her family as having close ties with globally mobile individuals, detailing her friends', neighbours' and colleagues' international moves, which make her life *VERY busy and rather emotional*. This then leads her to categorise herself as globally mobile as well: *I guess it's time to admit, we are living a true global nomadic life*. At the same time, however, she constructs a reluctance to accept this categorisation fully, firstly by having to *admit* her category membership, and then immediately questioning it again playfully: *Who'd have guessed!?!?!?!?!? Not me that's for sure hehehehe*. Whilst the latter can be read as an instance of surprise at her own conclusion, it may also function as irony and thus signal the opposite, namely that her category membership was evident all along.

Regardless of which of these possible readings is adopted, the extract illustrates how much negotiation may be involved in the claiming of category membership. The categorisation of herself and her family as persons who lead a globally mobile lifestyle has to be accomplished discursively and is seemingly reluctantly accepted due to the overwhelming evidence for it. Emily thus achieves claiming mobility at the same time as indicating that this may not have been a conscious endeavour, thus constructing mobility to be discovered as a feature of her natural lifestyle. Being a person in transition, then, entails moving internationally as well as having a social network sharing this mobile lifestyle.

### 6.1.3. Sharing knowledge gained through experience

A further aspect of being a person in transition is being able to share one's knowledge gained in the relocation process. Several bloggers post information or advice about moving to England in their blogs in order to support other potential future expatriates. This practice is already apparent in some of the first posts (7-8).

- (7) Moving pets to the UK is an expensive and lengthy process. I will be trying to document the pet process as we go and hopefully it will help others. [Jessica]

- (8) As we are leaving sooner (4-6 weeks max) rather than later, I decided to just DO the things that i know from past experience need doing to make the move as smooth as possible ..... [list of 17 steps follows] [Emily]

In example (7) Jessica mentions that she is in the process of moving her pets to the UK. She promises to keep her readers informed about her progress in order to help others in a similar situation. As she is currently arranging her pets' move, she can already claim with authority that it is *an expensive and lengthy process*. By means of her own experiences, she becomes a person who can give advice. The knowledge gained through the process is thus constructed as worth sharing for the benefit of others.

Similarly, in example (8) Emily portrays herself as knowledgeable on the basis of her previous experiences and able to take the necessary steps to organise the move: *I decided to just DO the things that i know from past experience need doing to make the move as smooth as possible*. This is then followed by a long and detailed list of 17 steps she takes in preparation for her and her family's move, such as packing, finding a buyer for their car and researching potential schools in England. All these activities are tied to being a person in transition, and listing them in detail both helps her to assert her category membership as well as serves as a potential source of advice for others.

Sharing one's knowledge gained in the process of moving abroad is a type of support that expatriates can provide for other expatriates. Just as the experience is characteristic of a person in transition, so does the sharing of it confirm one's category membership.

#### 6.1.4. Sharing one's life through stories

Finally, another form of sharing is an aspect of being a person in transition, namely the practice of sharing one's life through stories. This is related to the conception of a person in transition entering a new stage in life, as bloggers point out that they want to keep their readers informed about their life in England. Examples (9) and (10) contain explicit mentions of this intention.

- (9) I hope to share my life here in England though regular posts written for you like a series of picture postcards from abroad. Please drop by often and say hello. [Claire]
- (10) I always want to write so that my personality shines through. I want to share stories about my life straight from the heart. I want you to feel like you're right there with me. [Kim]

Claire in example (9) aims to *share my life here in England* and compares her posts to *a series of picture postcards from abroad*, thus adopting the perspective of her readers who have remained in her country of origin. Switching her viewpoint back, she encourages her audience to visit her blog and comment: *Please drop by often and say hello*. She thereby categorises herself as a person sharing her life with others and suggests that her life abroad is worth writing about, alluding to the discourse of adventure that is captured by sending postcards from one's travels.

A similar wish for closeness to her readers is expressed by Kim in example (10), who aims to *share stories about my life straight from the heart* and wants her readers *to feel like you're right there with me*. She thereby categorises herself as an open sharer of life stories, drawing on predicates of authenticity – *so that my personality shines through* – and closeness – *like*

*you're right there with me.* Sharing one's new life is thus a practice that a person in transition can legitimately engage in.

To summarise, MCA has revealed how bloggers draw on categorisations and predicates centring on the practice of being a person in transition in order to accomplish both a personal introduction and an explanation of their blogging in their first posts. The following key aspects have emerged: entering a new phase in life, being mobile as a lifestyle, sharing knowledge gained through expertise, and sharing one's life through stories. Whilst the analysis has focused on the local production of these categories and predicates in context, it has been able to show commonalities with regard to what identities expatriates evoke in order to achieve their goals.

## 6.2. Similarity and difference

Complementing the analysis of membership categories for identity work, the Tactics framework grants insight into how individuals position themselves with respect to others and how identity is produced through the dimensions of similarity, authenticity and legitimacy. The following analysis will focus on the first dimension and examine how expatriate bloggers use linguistic resources to construct and express similarities and differences between themselves and their environment. Example (11) illustrates the complexity of this positioning act.

- (11) So, what has brought me to begin this blog? I'll be moving to England come September to actually (*finally!*) live in the same place as the guy I am dating and to begin graduate school! Although I won't be able to share my adventures as an American living abroad as they are actually happening until then, I do have much to tell from the five weeks I spent in the UK at the beginning of this summer. So, for the time being, I'll be writing about that along with all of the other fun stuff that goes with preparing for a move across an ocean. There might even be some guest appearances from the Brit as it's rumored he has some visits planned before my departure! [Kim]

The most noticeable resource Kim draws on is overt categorisation of herself and her partner in terms of nationality. She refers to herself as *an American living abroad* and to her partner as *the Brit*. She thus uses nationality to juxtapose their background and to emphasise what to her appears be a salient difference between them. At the same time, however, she points out that she will be living abroad, thus modifying her category slightly, establishing difference between herself and Americans who have not moved abroad.

However, she also creates similarity between herself and her partner by announcing her relocation plans, pointing out that she will *be moving to England come September to actually (finally!) live in the same place as the guy I am dating* and that she is currently *preparing for a move across an ocean*. She creates more similarity between herself and her partner by moving to his country and sharing his environment. Also, having already spent some time in England means that she has *much to tell* even though she has not moved there yet. Whilst sharing a space and her experiences with her partner allows her to establish similarity between herself and him, the fact that spending time in England is worth telling about highlights that this is a new and different environment for her.

Establishing similarity or difference is thus a complex act potentially involving both poles on this scale, as they are very much intertwined. Whilst the construction of similarity and

difference can vary from person to person, an analysis of the first posts shows commonalities between expatriate bloggers. In the following, two such aspects are discussed in more detail: how individuals stress that they are or will have to be adopting English practices, and how they see moving abroad as an experience that they share with others.

### *6.2.1. Adopting English practices*

In their early posts before their relocation, several expatriate bloggers try to anticipate the changes they will be met with upon moving to England, impacting on their daily life and routine. This may encompass their social network, physical environment, or cultural and linguistic aspects. When reflecting on these, bloggers show an awareness of having to adapt by changing some of what can in broad terms be labelled their practices. Examples (12) and (13) illustrate this attentiveness to change.

- (12) Follow me as I get this blog up and running, add photos, a header, links... and as I get used to driving on the wrong side of the road. [Ruth]
- (13) I keep telling [pet names] that they all need to work on their British accents but I don't think they quite understand just yet. But, they will learn soon enough! [Jessica]

In example (12) Ruth invites her readers to follow her not only as she constructs and fleshes out her blog, but also as she adapts to driving on the left. She thus promises a narrative featuring her attempts to change a familiar practice. This is enhanced by her pointing out that she will be driving *on the wrong side*. Whilst she is aware of the changes she will have to adopt, she simultaneously creates distinction by emphasising her perspective on the matter.

Another feature expatriate bloggers show themselves aware of is being exposed to a different accent of English. Example (13) shows a playful approach to the topic: Jessica encourages her pets, and by implication herself, to change their accent. She thus positions them as different and points out that they will need to make an effort to become more similar to their future environment.

Anticipating the adoption of English practices hence offers bloggers a means to point out their differences and simultaneously foreshadow the construction of greater similarity with their environment. This allows them to revisit the matter at a later stage, delivering the promised narrative or reflect on if and how they have changed after living in England for a longer period of time.

### *6.2.2. Moving abroad as a shared experience*

Expatriate bloggers not only establish similarity or difference between themselves and their new environment, but they also do so with regard to other expatriates and their experiences. As discussed in Section 2, the expatriate blogosphere can engender in individuals a sense of community and shared experience by offering them access to others' narratives and reflections on living abroad. Although every expatriate's circumstances will be different, moving abroad and having to adjust to a new environment comes to be seen as a shared experience. This is evident in the blogroll, the list of links bloggers provide to other blogs they follow. These often include not only blogs written by other expatriates in England, but also by individuals who have moved to a different country. The unifying experience thus

seems to be the very act of moving abroad. Instances where this shared experience is acknowledged can be found below.

- (14) So, the rollercoaster of emotions have been oh so fun (obvious sarcasm). I think I may be in the denial portion of the 12 steps of moving to another country haha. [Jessica]
- (15) We are far from experienced expats, tho we do feel like we are global nomads, and as we prepare for our 3rd move maybe we are. [Emily]

Commenting on the ups and downs of preparing for her move, Jessica in example (14) locates her experiences in *the 12 steps of moving to another country*. She thereby acknowledges that what she is going through may be very similar to what other expatriates experience, and the steps in her process of relocation become identifiable as variations of a common theme. Going through these emotions in the course of moving abroad thus creates a sense of similarity to other expatriates who are undergoing similar processes.

However, the above extract communicates an additional layer of meaning. The *12 steps* allude to programmes designed to deal with personal problems such as addiction. This constructs the relocation process as a problem that needs to be addressed and solved step by step, and other expatriates as members of a self-help group. This reinforces the perception of the expatriate blogosphere as a community, albeit one based around an issue that needs resolving.

Example (15) shows that individuals may contemplate to what extent they are part of a community of expatriates. Emily does not want to claim expert status as she feels that her family do not have enough experience to do so. Yet at the same time she acknowledges that they are feeling like *global nomads* and that they are moving for the third time, which evidences that they must be reasonably familiar with the process. She thereby carefully manages relations of similarity and difference to other members of the expatriate community.

The dimension of similarity and difference thus grants insights firstly into how bloggers position themselves with regard to their new environment, what changes they anticipate they will be faced with and what English practices they consider adopting. Secondly, exploring notions of similarity and difference allows individuals to locate themselves within a community of expatriates sharing similar experiences. This dimension of Tactics hence enables an understanding of how expatriates construct and position their identity in relation to both their physical and online environment.

## 7. Discussion and conclusion

Identity is multi-faceted, shifting and constantly constructed and negotiated through language. This is especially prevalent in expatriate blogs, as these sites contain personal narratives and reflections written by foreign nationals at the time of their relocation. These were triggered by the move abroad and contain a wealth of identity work as individuals document and reflect on the transition they undergo. Even though their experiences are individual and their identity is constructed locally in every blog post, the analysis has shown that there exist commonalities across the blogs. This was achieved by illustrating the prevalent categorisations and constructions of similarity and difference expatriate bloggers employ to construct and express their identity.

An examination of the membership categories expatriates draw on to accomplish their first posts has revealed that being a person in transition is a means for individuals to introduce themselves to potential readers and legitimise their blogging practices as people who have a story to tell. Transition is highlighted in the self-categorisation of bloggers as people who are entering a new phase in life, or who have adopted global mobility as part of their lifestyle. They further impart their knowledge about aspects of moving abroad, which they have acquired by virtue of undergoing this process themselves. Finally, expatriate bloggers construct themselves as people wanting to share their new life through stories.

The first dimension of Tactics, the construction of similarity and difference, examines notions that are central to expatriates' experience of being in transition and thus potentially undergoing personal change. The analysis has revealed that expatriate bloggers discuss the adoption of English practices both to fit in better with their new environment as well as to emphasise how they are different from it. This negotiation is not limited to their immediate physical environment, but also pertains to other expatriates, whose experiences are accessible through the expatriate blogosphere.

The combination of MCA and Tactics is fruitful as they focus on different aspects of identity. As part of the *relationality principle* (Bucholtz & Hall 2005), Tactics emphasise the relational and social dimension of identity and how individuals position themselves with regard to others. MCA, in contrast, focuses on how individuals employ certain types of categories and identities in order to achieve certain interactional goals, which in this case comprised accomplishing a first blog post through being a person in transition. The relational aspect and the focus on an individual's self-categorisation complement each other and offer a more holistic picture of how identity is achieved in expatriate blogs.

Further research could incorporate the remaining dimensions that constitute the Tactics framework and thereby examine how expatriate bloggers authenticate and authorise their identity especially in their early posts but also throughout their blogging practice. This promises to be a fruitful endeavour as the combination of the two approaches undertaken in this research has granted further insights into linguistic aspects of identity construction in a moment of transition and change.

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# The Syntax of Conjunct Extraposition

## Conjunct Extraposition

Imke Driemel

Conjunct extraposition refers to a discontinuous coordinate structure in which the first and the last conjunct are separated by some intervening material. German conjunct extraposition can occur with singular as well as plural agreement. This paper argues for an ellipsis approach with an underlying bi-clausal structure and subsequent deletion of the redundant material at PF. Plural agreement is caused by multiple dominance: the probe is shared between the two conjuncts and subsequently needs to move out in order to be linearized. Evidence for this proposal comes from word order variations, reciprocal verbs, and sloppy identity effects, among others.

### 1. Introduction

Conjunct extraposition<sup>1</sup> (CE) refers to a discontinuous coordinate structure in which the first and the last conjunct are separated by some intervening material and the last conjunct and the coordinator occur at the end of the sentence. CE can be observed in German, shown in (1), as well as in English, shown in (2). The sentence in (1) provides an example for subject coordination while the sentence in (2) shows object coordination.

- (1) Hans ist gestern angekommen und Bernd.  
Hans be.3SG yesterday arrived and Bernd  
'Hans and Bernd arrived yesterday.'

- (2) John bought a book yesterday, and a newspaper. (Munn 1993:15)

There are two kinds of analyses for conjunct extraposition: a movement account and an ellipsis account. The movement approach, e.g. Müller (1995) or Buring & Hartmann (1997), analyzes CE as rightward movement and subsequent adjunction of the coordinator and the last conjunct to TP or CP. In contrast, the ellipsis account takes CE to be *Bare Argument Ellipsis* (BAE)

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<sup>1</sup>I will refer to extraposition as a purely phenomenal term since it is a common way to address this construction. Conjunct extraposition is thus used independently of any underlying theory.

or *Stripping*, and assumes an underlying bi-clausal structure with subsequent deletion of the redundant material at PF (Zhang 2009; Winkler 2005; Konietzko & Winkler 2010).

For CE involving coordinated subjects like in (1) an ellipsis approach is clearly favored since the finite verb shows singular agreement which can only be derived if the the verb agrees with each subject on its own. A movement approach predicts plural agreement on the verb since both subjects are first-merged in one complex coordinate phrase. Prinzhorn & Schmitt (2010) observe that CE is possible with plural agreement, see (3)-(4), but only if no conjunct precedes the finite verb, see (5)-(6).

- (3) Gestern sind der Hans angekommen und der Bernd.  
 yesterday be.3PL the Hans arrived and the Bernd  
 ‘Yesterday Hans arrived, and Bernd.’ (Prinzhorn & Schmitt 2010:166)
- (4) Gestern haben der Hans gehustet und der Bernd.  
 yesterday have.3PL the Hans coughed and the Bernd  
 ‘Yesterday Hans coughed, and Bernd.’ (Prinzhorn & Schmitt 2010:177)
- (5) \*Der Hans sind gestern angekommen und der Bernd.  
 the Hans be.3PL yesterday arrived and the Bernd  
 ‘Yesterday Hans arrived, and Bernd.’ (Prinzhorn & Schmitt 2010:166)
- (6) \*Der Hans haben gestern gehustet und der Bernd.  
 the Hans have.3PL yesterday coughed and the Bernd  
 ‘Yesterday Hans coughed, and Bernd.’ (Prinzhorn & Schmitt 2010:177)

One piece of data that exemplifies the whole range of similar phenomena that will be discussed in this paper concerns plural agreement on possessive pronouns as it is shown in (7) and (8): The possessive pronoun *ihre* can refer to a feminine singular individual (here possibly a referent mentioned in the preceding context) or a plural individual (here Hans and Bernd). Both readings are available in (7) but only the former is possible in (8).

- (7) Ihre<sub>i+j</sub> Mutter haben gestern nur der Hans<sub>i</sub> angerufen und der Bernd<sub>j</sub>.  
 POSS.3PL mother have.3PL yesterday only the Hans called and the Bernd  
 ‘Yesterday only Hans called their mother, and Bernd.’ (Prinzhorn & Schmitt 2010:180)
- (8) \*Gestern haben nur der Hans<sub>i</sub> ihre<sub>i+j</sub> Mutter angerufen und der Bernd<sub>j</sub>.  
 yesterday have.3PL only the Hans POSS.3PL mother called and the Bernd  
 ‘Yesterday only Hans called their mother, and Bernd.’ (Prinzhorn & Schmitt 2010:180)

The ellipsis analysis runs into problems as soon as the verb or a possessive pronoun show plural agreement.<sup>2</sup> Consequently, both the movement and the ellipsis approach cannot account for

<sup>2</sup>The term *agreement* will be used here in the sense of Corbett (2006), referring to some systematic covariance between a property of a controller and a property of a target. With respect to verb agreement the syntactic operation *Agree*, i.e. *Feature-Copying*, applies. In contrast, agreement of a possessive pronoun with its antecedent is due to *binding*. Following Heim (2008),  $\varphi$ -features are transmitted onto the pronoun under variable binding which in turn requires syntactic binding, i.e. c-command. Since the controllers given so far are non-quantificational, the examples

the whole set of data. This observation led Prinzhorn & Schmitt (2010) to propose a mixed movement/ellipsis analysis for conjunct extraposition in which CE with singular agreement is analysed as ellipsis and CE with plural agreement as rightward movement. However, what they notice but fail to explain is why the sentences in (5), (6), and (8) are judged unacceptable even though they are only minimally distinct from their acceptable counterparts.

A further problem that a movement-only approach has to face is its potential violation of the *Coordinate Structure Constraint* (CSC) (Ross 1967), which states that neither a single conjunct nor part of a single conjunct can be extracted out of a coordinate structure. The CSC is violated if we assume rightward movement for the coordinator and the second conjunct in (3)-(8).<sup>3</sup> An ellipsis-only approach prevents violations of the CSC by assuming a coordination of clauses instead of a coordination of DPs.

The movement approach will be examined in detail with respect to the plural agreement cases in section 2. I will show that no version of the movement accounts proposed so far is able to account for the whole set of data in (3)-(6). In order to cover the whole set of data an ellipsis account will be proposed in section 3, which additionally makes use of *Multi-Dominance* (MD) along the lines of Citko (2005) and Grosz (2015). With the help of MD the proposed account is able to provide an explanation for the plural agreement cases in (3), (4), and (7). The ungrammaticality in (5), (6), and (8) will be analyzed as a violation of the CSC so that the hybrid MD/ellipsis account acts in total accordance with the CSC. In section 4, I show how the hybrid account can derive the commonly observed ban on conjunct topicalization. Furthermore, I will look at additional evidence concerning interpretation with respect to strict/sloppy identity, relational adjectives, summative quantifiers, and collective predicates.

The discussion will mainly focus on German since English requires a strict SVO word order. Furthermore, only subject coordination will be discussed since it provides the interesting agreement features. Object conjunct extraposition is taken to be a simple case of BAE as well, but will not be discussed any further.

## 2. Conjunct Extraposition as Movement

In the following section I will present three possible movement analyses for CE structures with plural agreement, shown in (3) and (4). None of the accounts will be able to provide an explanation for the unacceptability of (5) and (6) which are only minimally distinct from (3) and (4). In order to provide a movement account, the structure of coordination itself has to be discussed. The coordinator and the last conjunct are only able to move if they form a maximal projection. The consequences of this account will be discussed in the next section.

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below show that the same observations can be made with quantifiers as well.

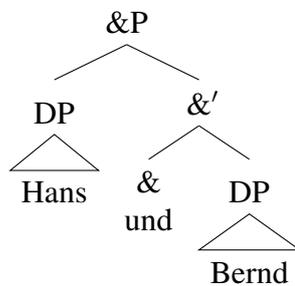
- (i) \*Gestern haben [ein Mitarbeiter]<sub>i</sub> ihren<sub>i+j</sub> (gemeinsamen) Chef angerufen und [ein Praktikant]<sub>j</sub>.  
 yesterday have.3PL an employee POSS.3PL (same) boss called and an intern  
 ‘Yesterday an employee called their boss, and an intern.’
- (ii) Ihren<sub>i+j</sub> (gemeinsamen) Chef haben gestern [ein Mitarbeiter]<sub>i</sub> angerufen und [ein Praktikant]<sub>j</sub>.  
 POSS.3PL (same) boss have.3PL yesterday an employee called and an intern  
 ‘Yesterday an employee called their boss, and an intern.’

<sup>3</sup>See Hartmann (2000) for evidence that the CSC not only holds for leftward but also for rightward movement.

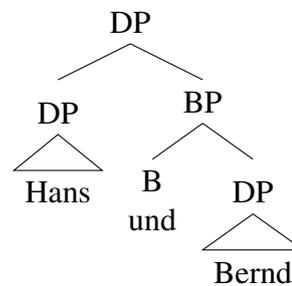
### 2.1. The Structure of the Coordinate Phrase

Under the well established assumption that the coordinate phrase is binary branching (Munn 1987; Ross 1967; Dik 1968; Kayne 1994), there are two competing analyses for the inner structure of a coordination. The first approach in (9) assumes a structure in which the coordinate phrase constitutes a functional projection (&P) with the coordinator being the head, the first conjunct situated in the specifier position and the second in the complement position (Wilder 1994; Johannessen 1998; Zhang 2009). In contrast, the analysis in (10) assumes that the second conjunct forms an independent phrase (*boolean phrase*) with the coordinator as the head, which then adjoins to the first conjunct. This structure was first proposed by Munn (1993) and then adopted e.g. by Hartmann (2000) and Bošković & Franks (2000).

(9) Functional Projection:



(10) Adjunction:



The main argument against adjunction stems from the unacceptability of topicalized BPs (Zhang 2009:22), shown in (11): the second conjunct and the coordinator cannot move as a whole, which is unexpected if they form a phrase. In (9) they are analyzed as an intermediate projection, the inability to topicalize is therefore expected (example originally taken from Postal (1998)).

- (11) a. [Tall and slim]<sub>i</sub> though Helen is t<sub>i</sub> ...  
 b. \*[and slim]<sub>i</sub> though Helen is [tall t<sub>i</sub>] ... (Postal 1998:191)

The same observation can be made with respect to German.

- (12) \*[und der Bernd]<sub>i</sub> sind gestern der Hans t<sub>i</sub> angekommen  
 and the Bernd be.3PL yesterday the Hans arrived  
 'Hans and Bernd have arrived yesterday.'

Two arguments can be given in favor of the adjunction approach: one is based on c-selection and the other one is related to the coordination of unlike categories. If we assume a structure such as the one in (9) many if not all verbs should be able to select for an &P which would increase the size of each lexical entry so that they potentially take up more space in the lexicon. This additional assumption can be avoided with the adjunction structure since the whole coordination is of the same category as the first conjunct (see Munn 1993:22). Furthermore, there are data that suggests the possibility of a head only selecting for one conjunct, see (13). The sentence in (13-b) is ungrammatical because the preposition cannot merge with a CP. Interestingly, (13-c) is fine. What (13-a) and (13-c) have in common is that the CP is not a sister of the preposition

*on* but is adjoined elsewhere (Munn 1993:80). The data in (13) can be easily explained if we assume that the second conjunct is only adjoined to the first and therefore does not influence the syntactic behaviour of the whole coordination.

- (13) a. You can depend on my assistant and that he will be on time.  
 b. \*You can depend on that he will be on time.  
 c. That he will be on time you can depend on. (Munn 1993:80)

In the following section I will use the adjunction account in (10) to try to analyze the plural agreement CE data, shown in (3)-(8), with different versions of a movement-only approach. No version will be able to fully account for the data without violating basic syntactic principles.

## 2.2. Rightward Movement as a last step

The sentences in (5) and (6) are minimally distinct from the sentences in (3) and (4) in that the first conjunct is moved to the specifier of CP in the former but not in the latter. A plausible account for the ungrammaticality of (5) and (6) can be given in terms of a *freezing effect*, after which extraction out of an already moved phrase is prohibited<sup>4</sup> (Ross 1967; Culicover & Wexler 1977). The ban on subextraction plays a role in a number of cases independent of whether it takes place from a leftward moved (Müller 2001) or rightward moved (Büring & Hartmann 1997) constituent.

One could argue that the extraction of the BP in (5) and (6) leads to a violation of the freezing constraint since the coordinate phrase has already undergone movement to spec,TP and spec,CP. The structure for (6) is given in (14).

- (14) \*Hans haben gestern gehustet und Bernd.  
 Hans have.3PL yesterday coughed and Bernd  
 ‘Yesterday Hans coughed, and Bernd.’  
 $\rightsquigarrow$  [<sub>CP</sub> [<sub>CP</sub> [Hans ⟨*und Bernd*⟩] ... [<sub>TP</sub> ⟨*Hans und Bernd*⟩] ... [<sub>vP</sub> ⟨*Hans und Bernd*⟩] ... ]]] [<sub>BP</sub> und Bernd]]

However, the same reasoning applies to grammatical (3) and (4) since the coordinate phrase nevertheless moves to spec,TP before extraction takes place. Thus, freezing cannot be responsible for the difference in grammaticality. The structure for (4) is given in (15).

- (15) Gestern haben der Hans gehustet und der Bernd.  
 yesterday have.3PL the Hans coughed and the Bernd  
 ‘Yesterday Hans coughed, and Bernd.’  
 $\rightsquigarrow$  [<sub>CP</sub> gestern ... [<sub>TP</sub> [<sub>TP</sub> [Hans ⟨*und Bernd*⟩] ... [<sub>vP</sub> ⟨*Hans und Bernd*⟩] ... ]]] [<sub>BP</sub> und Bernd]]]]

<sup>4</sup>Abels (2008) provides a more fine-grained theory of the freezing constraint in which the occurrence of a freezing effect depends (i) on the type extraction movement and (ii) on the type of movement of the phrase out of which extraction takes place. Since Abels (2008:4) bans rightward movement altogether, his ideas will not be taken into consideration here.

### 2.3. Rightward Movement as a first step

In order to avoid the freezing problems one could assume that extraction takes place before the coordinate phrase moves to its final landing site. However, on this assumption (14) and (15) should both be grammatical, contrary to fact. The structure in (14) is different from the structure in (15) only insofar as the coordinate phrase has to perform one more remnant movement operation.

Theories which take the type of remnant movement and the type of movement creating the remnant into account (Müller 1998; Grewendorf 2003) cannot account for the facts either. According to the *Condition of Unambiguous Domination* (Müller 1996, 1998), remnant movement cannot occur if it is of the same type as the movement that creates the remnant. The type of movements are *wh*-movement, topicalization, A-movement, and extraposition, among others (Müller 1998:241). Since they do not violate the Condition of Unambiguous Domination, Müller's theory predicts both (14) and (15) to be grammatical, again contrary to fact. Grewendorf (2003, 2015) builds on the assumptions of Müller (1996, 1998) but furthermore introduces a hierarchy which additionally constrains the type of movements, in that remnant movement has to be of a higher type than remnant creating movement. The hierarchy ranks movement types in the following way from high to low: *A'-movement as operator movement* < *A'-movement as non-operator movement* < *adjunction movement* < *A-movement* (Grewendorf 2003:79). Under the assumption that extraposition is adjunction movement, (15) should be judged ungrammatical since A-movement, in this case remnant movement, ranks lower than adjunction movement, the remnant creating movement. In contrast, (14) should be judged grammatical since topicalization, a non-operator movement and in this case the remnant movement, ranks higher than adjunction movement. Thus, Grewendorf's hierarchy makes the exact opposite predictions for (14) and (15).

Looking more closely at the currently presented structure we are faced with another serious problem. As is commonly known, TPs cannot be fronted (Abels 2003; Wurmbrand 2004), in contrast to e.g. *v*Ps, see example (16).

- (16) a. ??[<sub>TP</sub> Gestern ein Vertreter angerufen] hat wahrscheinlich.  
           yesterday a.NOM salesman called has probably  
           'It was probably yesterday that a salesman called'
- b. [<sub>vP</sub> Ein Vertreter angerufen] hat wahrscheinlich erst gestern.  
           a.NOM salesman called has probably just yesterday  
           'It was probably just yesterday that a salesman called.' (Wurmbrand 2004:2)

Applying this test to the CE data we can observe that the constituent to which the BP is adjoined cannot be topicalized either, see (17). This suggests that the adjunction site of the BP can be no lower than at the TP level.

- (17) \*[Der Pfarrer den Papst angerufen und der Bischof] haben vielleicht.  
       the.NOM priest the.ACC pope called and the.NOM bishop have.3PL maybe  
       'The priest and the bishop maybe called the pope.'

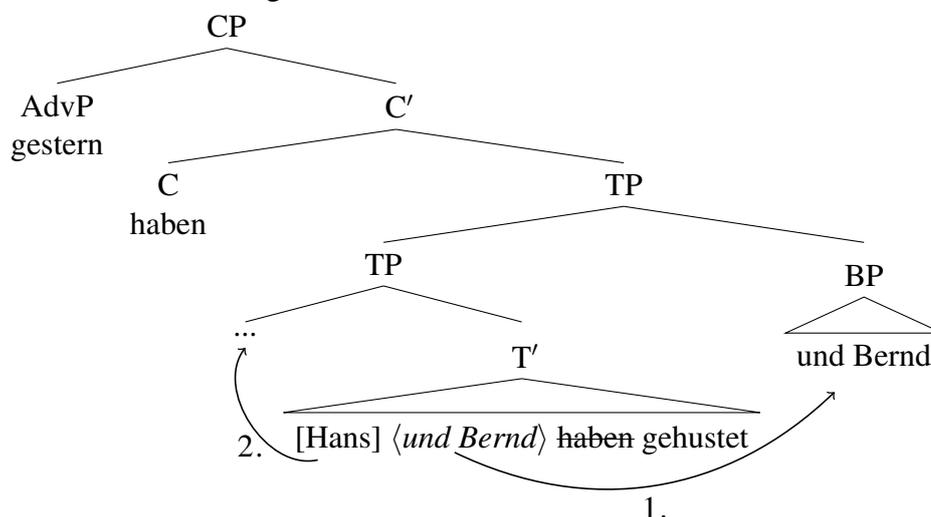
It might be objected that the ungrammaticality of (17) is due to the presence of an additional ad-

junct, i.e. the BP. However, fronted *v*Ps are generally possible in German, even with an adjunct, see (18).

- (18) [<sub>vP</sub> Oft [<sub>vP</sub> den ersten Preis gewonnen]] hat Maria in diesem Jahr.  
 often the.ACC first price won has Maria in this year  
 ‘Maria often won the first price this year.’

The position of the adjunction site is crucial for the analysis of conjunct extraposition. If the BP has to adjoin to TP instead of *v*P the current analysis violates the *Strict Cycle Condition* (SCC) (Chomsky 1973) which bars all movement lower in the tree than the highest projection. Under the assumption that rightward movement precedes leftward movement, (4) has the structure in (19). Following minimalist assumptions (Chomsky 1995), BP adjoins to TP before the TP is derived completely. Only after TP-adjunction does the complex subject move to spec,TP. This constitutes a violation of the SCC and should thus result in ungrammaticality.

- (19) Gestern haben Hans gehustet und Bernd.



### 3. The new hybrid approach to Conjunct Extraposition

Since mono-clausal movement approaches face a number of problems — not only in the plural agreement cases discussed in the preceding section but also in the more often observed case of singular agreement discussed in the introduction — I will now turn to an alternative proposal, that is, a bi-clausal ellipsis account. As already shown in the introduction, conjunct extraposition in combination with singular agreement on the verb and/or on the possessive pronoun can be analysed as a coordination of CPs with subsequent deletion of all the material except the subject in the second conjunct. The plural agreement structures will be analysed in a similar fashion albeit with one crucial addition: The lexical element which shows plural agreement, such as the verb or the possessive pronoun, is taken to be shared by both conjuncts in the coordination. The basic idea of multi-dominance will be developed in the first part of this chapter. Most importantly, the issue of linearisation has to be addressed. The second part will be dedicated to

the role of multi-dominance in the theory of CE.

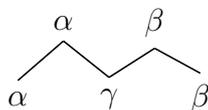
The hybrid CE approach assumes a coordinate structure in which the coordinator is the head of a functional projection. Without having to assume that the coordinator and the second conjunct have to form one constituent in order to move, the adjunction structure loses one of its main arguments. With respect to the multi-dominance structure it does not make a difference whether we assume adjunction or an &P, but the latter does provide us with the optimal environment in terms of topicalization, as we will see in section 4.

### 3.1. Multi-Dominance

#### 3.1.1. An Alternative to Ellipsis and ATB-movement

Minimalist syntax defines two sub-cases of the operation *merge*: either two categories are merged which have not been in a relation before or two categories are merged and one of them contains a sub-part of the other. The former is called *external merge*, the latter *internal merge* (Chomsky 2005). Certain properties of coordination structures have shown that there might be a third sub-case called *parallel merge* in which two categories are merged that are located in different trees. The third type combines the first two sub-cases in that on the one hand the two categories, i.e. the two mothers, have not been in a relation before and on the other hand they each contain a sub-part of the other, i.e. the shared constituent (Citko 2005). The operation parallel merge is illustrated in (20).

(20) Parallel Merge:



In order to build multi-dominance trees the *Single Mother Condition* has to be loosened, according to which all nodes in a tree must be connected to one mother. An important difference between multi-dominance accounts and ellipsis accounts concerns the number of constituents. In the former there is only one constituent which is multiply shared and therefore only able to be linearized in one of the conjuncts, ultimately leaving a gap in the other. In the latter there are two constituents of which one is a deleted constituent at PF, hence causing a gap in one of the conjuncts.

Multi-dominance analyses have been developed mostly for coordination phenomena such as Right Node Raising (McCawley 1982; Goodall 1983; Muadz 1991; Moltmann 1992; Wesche 1995; Wilder 1999; Abels 2004; Wilder 2008; Gracanin-Yukse 2007, 2013; Bachrach & Katzir 2007, 2009; Kluck 2009; de Vries 2013; Grosz 2015), Gapping (Wesche 1995; Gracanin-Yukse 2007; Citko 2012), and ATB-*wh*-questions (Williams 1978; Goodall 1983; Moltmann 1992; Citko 2005, 2006; Gracanin-Yukse 2007, 2013). Some subordinate structures make use of MD as well, e.g. *parentheticals* (de Vries 2007) and *amalgams* (Guimarães 2004; van Riemsdijk 2006; Johnson 2013). Finally, there are also multi-dominance approaches which consider internal merge, i.e. movement, as a form of parallel merge (Starke 2001; Gärtner 2002; Framp-

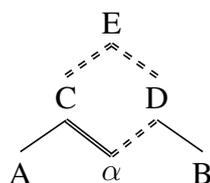
ton 2004; Gracanin-Yukse 2007, 2013; Bachrach & Katzir 2007, 2009). However, I will not pursue this idea here for several reasons that will become obvious in the following discussion. One important issue that immediately arises with multi-dominance structures is linearisation. How can we map the terminals of two trees to a string of words in which one terminal is part of both trees? This question will be answered in the next section.

### 3.1.2. Linearisation

Syntactic relations such as *dominance* and *c-command* do not refer to precedence relations, that is, they do not determine the order of words at PF. One attempt to derive precedence of the terminals from the hierarchy in a syntactic tree has been made in the form of the *Linear Correspondence Axiom* (LCA) (Kayne 1994). The LCA proposes that linear orders can be read off as asymmetric *c-command* relations that hold between terminals. This poses several restrictions on syntactic trees in general. Most importantly, every terminal must be contained in a structure which asymmetrically *c-commands* another structure containing other terminals. All terminals that satisfy this relation are then collected in a set of ordered pairs which ultimately map onto the linear order of a one-dimensional string of terminals. Not only does the LCA predict the linear order of the terminals, it also determines which syntactic structures are possible.

Multi-dominance structures by definition violate the condition of irreflexivity. In (21) we see the basic structure of a multi-dominance tree in which the shared node  $\alpha$  is obligatorily dominated and asymmetrically *c-commanded* by the same node C. Consequently,  $\alpha$  has to precede itself since precedence is mapped onto asymmetric *c-command* and  $\alpha$  is contained (double line) in the structure that asymmetrically *c-commands*  $\alpha$  itself (dashed double line). Since nothing can precede itself, the tree is not linearisable.

(21) MD and Irreflexivity:



In Wilder (1999, 2008) for example, a solution to the linearisation problem is offered in a modified version of *c-command* which is now defined not in terms of dominance but in terms of *full dominance* which excludes the shared nodes. For the tree in (21) this means that  $\alpha$  is not fully dominated by C because  $\alpha$  is shared with D. Under this assumption *c-command* and (full) dominance are still mutually exclusive. Furthermore, Wilder proposes that nodes that are not fully dominated are invisible to the LCA. Thus, the shared node  $\alpha$  in (21) is linearised via the *c-command* of C (dashed double line) but ignored by the dominance of C (double line), therefore obviating reflexivity.<sup>5</sup>

An alternative solution to the linearisation problem is suggested by Citko (2005) who as-

<sup>5</sup>Neither C nor D fully dominate  $\alpha$ , thus excluding  $\alpha$  from the *image* (Kayne 1994) of C as well as from the image of D. Under the assumption that E is a projection of D, C asymmetrically *c-commands*  $\alpha$  but D does not. This way,  $\alpha$  is linearised solely via *c-command* of C.

sumes that shared constituents simply have to move out of the structure in which they are multiply dominated so that they can be linearized in a non-shared position. Since traces are invisible to the LCA, asymmetry violations do not arise. With an assumption like this, the definition of c-command does not have to be modified in order to linearise multiple dominance structures. This idea will be developed further in the following section.

### 3.2. *The Proposal*

#### 3.2.1. *Shared constituents have to move*

In line with Citko (2005) I will assume that in order to linearise a multi-dominance structure the shared constituents have to move out of the coordinate structure. Citko suggests that this is exactly what happens for ATB-*wh*-questions which in her analysis have the structure in (22)<sup>6</sup>.

- (22) I wonder [<sub>CP</sub> what<sub>i</sub> ... [<sub>TP<sub>1</sub></sub> Hansel recommended] and [<sub>TP<sub>2</sub></sub> Gretel read **⟨what⟩<sub>i</sub>**]]  
(Citko 2005:479)

After the *wh*-phrase is shared as an object to both verbs in TP<sub>1</sub> and TP<sub>2</sub>, it has to move out of the coordinate TP structure to merge with the head in CP. Since the LCA operates at PF, the copy of the shared constituent is not visible to the LCA, thus the construction is perfectly linearisable.

Evidence for this obligatory movement comes from two independent observations: the lack of ATB-movement at LF (see also Bošković & Franks 2000) and the exceptional *wh*-movement in ATB-questions of *wh*-in-situ languages like Chinese, Korean and Japanese. The latter is shown in (23) for Chinese, in which the *wh*-phrase receives a strict reading, which in turn suggests that it is shared.

- (23) Shenne ren Zhangsan xihuan Lisi taoyan?  
which person Zhangsan like Lisi hate  
'Which person does Zhangsan like and Lisi hate?'  
Not: 'Which person does Zhangsan like and which person does Lisi hate?'  
(Citko 2005:489)

If movement is crucial for the linearisation of multiply dominated nodes, it has to happen before *Spell-Out*. Thus, *wh*-in-situ languages like Chinese show exceptional *wh*-movement.

For the same reason ATB quantifier raising is not possible (Bošković & Franks 2000). In (24) the phrase *every girl* is not shared, hence it does not have to move out of the coordination. Since movement is crucially important for linearisation in ATB-contexts, it has to take place overtly. Thus, covert ATB-movement is predicted not to exist at all because it happens after spell-out, which is why there is no wide scope reading in (24).

- (24) Some boy hugged every girl and kissed every girl. ( $\exists > \forall$ ,  $*\forall > \exists$ )  
(Bošković & Franks 2000:114)

<sup>6</sup>Bold-faced copies stand for multiply dominated copies.

Other empirical evidence comes from observations about Right Node Raising and anaphora binding, shown in (25).

- (25) a. \*John liked and Mary hated some pictures of themselves.  
 b. Which pictures of themselves did John like and Mary hate? (Hartmann 2000:70)

Hartmann analyses RNR as ellipsis with subsequent PF-deletion, thus (25-a) is ungrammatical because the anaphor cannot be bound by the two subjects at the same time. However, (25-b) is then left unexplained because moving the multiply bound anaphor into the left periphery should not make any difference with respect to grammaticality, since the anaphor cannot be multiply bound in the first place. In contrast, Wilder's account is able to explain (25-b), but not (25-a) because the RNR target is said to be multiply dominated, hence it should be able to be multiply bound as well. In fact, the only way out of this dilemma is to assume that in order for something to be shared, it has to move out of the structure in which it is shared. With respect to (25), this means that as long as the anaphor stays inside the coordination, it cannot be shared, thus it cannot be bound by the two subjects, as is the case in (25-a). The movement of the anaphor in (25-b) though enables it to be multiply dominated, therefore it can be multiply bound.<sup>7</sup>

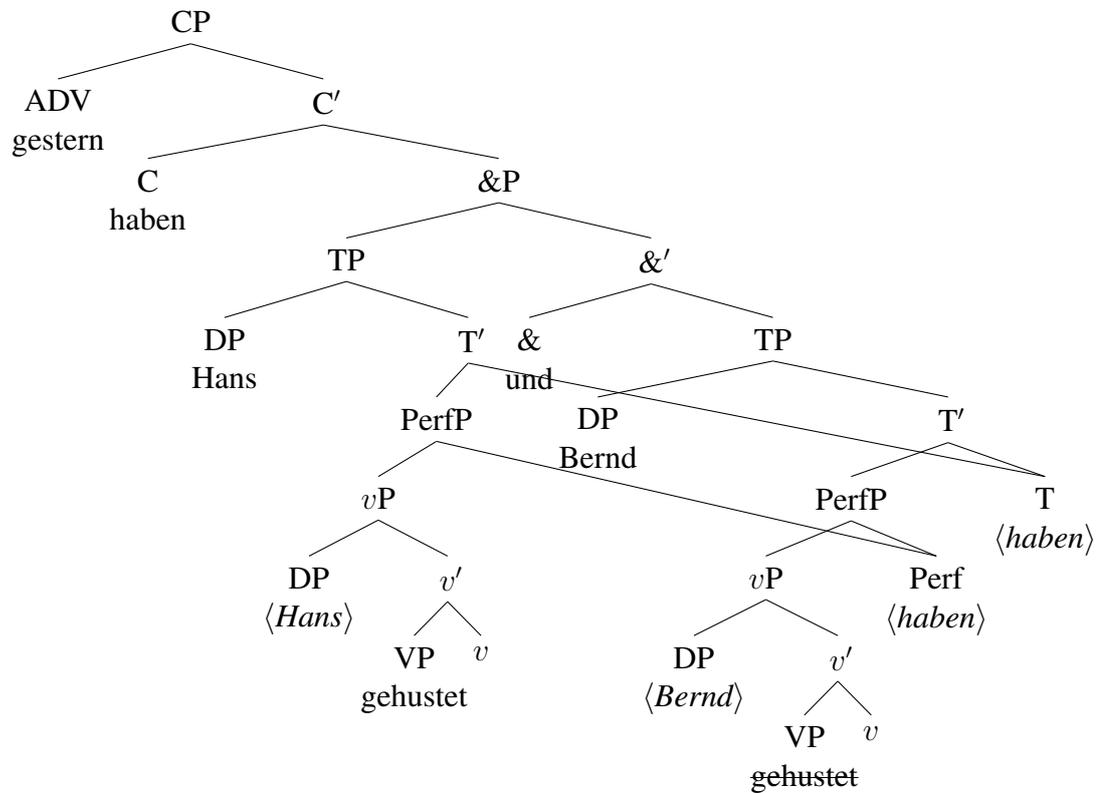
With these observations in mind I come back to conjunct extraposition. Only shared nodes have to move, unshared nodes can stay in-situ. Let us assume that only those nodes which show plural agreement are shared. In order to provide the right environment for the shared nodes to move out of the coordinate phrase, I will assume coordination at the TP level. This way, the shared nodes, i.e. the verb or the possessive pronoun, can move to the head or specifier of CP, respectively, in case they show plural agreement. The sentence in (4)<sup>8</sup> then has the following structure:

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<sup>7</sup>The data on variable binding are not entirely conclusive though, as Citko (2005:493) points out herself. For some yet unknown reasons, reconstruction into both conjuncts shows an asymmetry between the conjuncts:

- (i) a. \*Which picture of himself<sub>i</sub> did Mary sell and John<sub>i</sub> buy?  
 b. Which picture of himself<sub>i</sub> did John<sub>i</sub> sell and Mary buy?

<sup>8</sup>(3) can be analysed in a similar way since they only differ with respect to their  $\theta$ -roles, *angekommen* being an unaccusative verb and *gehustet* being an unergative verb. This structural difference has no consequence for the following analysis. Thus, (26) serves to explain (4) as well as (3).

(26) CE with plural agreement:

The multiply dominated T node makes sure that the auxiliary is c-commanded by both subjects which enables plural agreement. The shared node *haben* moves out of the coordinate structure to C whereas the participle *gehustet* stays in-situ. Following Citko (2005) we have to conclude that the participle cannot be shared. If the participle was shared it would have to move out of the coordinate structure. Following Konietzko & Winkler (2010), I assume that the second VP gets deleted at PF.

### 3.2.2. Agreement in multiple dominance trees

The plural agreement in CE structures constitutes a case of *summative* agreement, or *cumulative* agreement as it is sometimes called, which can occur in a coordination structure where one agreement target can agree with the sum of two disjoint agreement controllers instead of agreeing with each controller on its own. Summative agreement has been observed in e.g. English (Postal 1998; Yatabe 2003; Wilder 2008), Russian (Kazenin 2002), and German (Schwabe & von Heusinger 2001).

For plural agreement in CE structures I adopt the theory of summative agreement presented in Grosz (2015) which was originally developed for *Right Node Raising* (RNR) structures that can similarly show optional plural agreement like CE, see (27). Earlier observations have already been made by Postal (1998) and Wilder (2008), shown in (28) and (29).

(27) [Sue's proud that Bill] and [Mary's glad that John] have/\*?has traveled to Cameroon.

(Grosz 2015:6)

- (28) [The pilot claimed that the first nurse] and [the sailor claimed that the second nurse] were spies/ \*was a spy. (Postal 1998:173)
- (29) [Mary met a man] and [John met a woman] who were/ \*was wanted by the police. (Wilder 2008:253)

German shows RNR with plural agreement as well, see (30).

- (30) [Der Gustav ist stolz, dass die Tina] und [der Otto ist froh, dass der Tom] nach the Gustav is proud that the Tina and the Otto is glad that the Tom to Nigeria reisen werden/\*werdet/wird.  
Nigeria travel will.3PL/will.2PL/will.3SG  
'Gustav is proud that Tina, and Otto is glad that Tom, will travel to Nigeria.'  
(Grosz 2015:9)

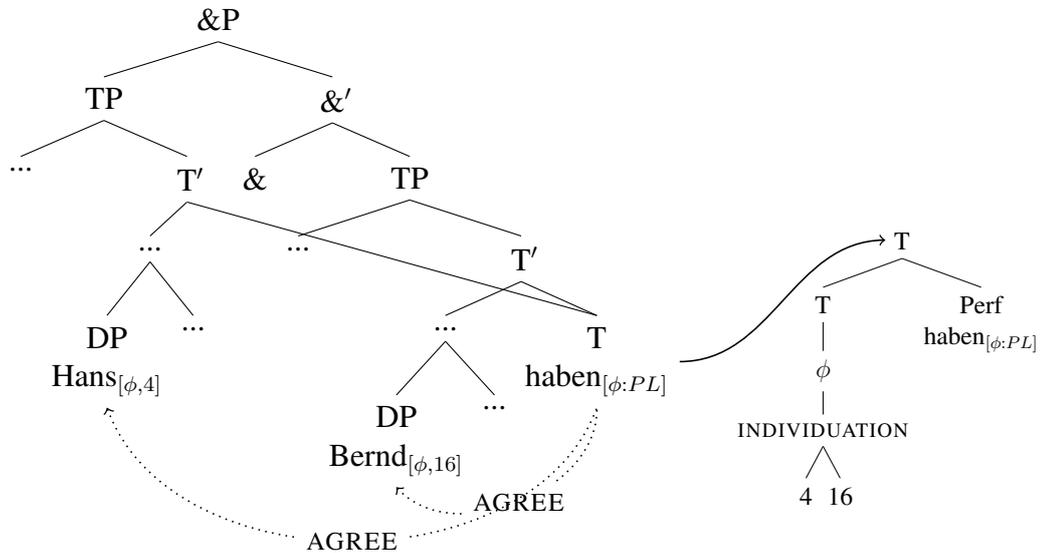
Grosz analyzes RNR as a bi-clausal structure containing multiply dominated constituents. Linearization is taken care of by the multi-dominance versions of c-command and dominance developed in Gracanin-Yukse (2007, 2013). Grosz assumes referential features which are structurally encoded in DPs and get copied onto T via agreement.<sup>9</sup> Two distinct referential features result in plural agreement whereas one referential feature results in singular agreement. Referential features are part of hierarchically structured  $\phi$ -feature *bundles*. Grosz furthermore assumes a *Group* feature for plural DPs which is dominated together with the referential features by an INDIVIDUATION node<sup>10</sup>. Number agreement is now determined as follows: If the INDIVIDUATION node that gets copied onto T is branching, as it is the case (i) with plural DPs branching into a referential feature and a group feature and (ii) with multiply dominating disjoint DPs branching into two referential features, number gets spelled out as plural. If the INDIVIDUATION node is not branching, as it is the case with singulars DPs with only one referential feature, number gets spelled out as singular.

The agreement mechanism developed for RNR structures will now be applied to plural agreement<sup>11</sup> in CE structures. Since T multi-dominates both subjects, the referential features of these two disjoint subjects are copied onto the T node via agreement resulting in a branching INDIVIDUATION node which in turn triggers plural agreement, see (31) for (26).

<sup>9</sup>It might be objected that after the probe has agreed with one goal it stays inactive for the other goal, i.e. the verb can only agree with one subject. However, under the assumption of multi-dominance neither subject is closer to the verb than the other, thereby allowing both agreement operations to happen simultaneously, Citko (see also 2005:481).

<sup>10</sup>INDIVIDUATION node and *Group* feature refer to terminology based on Harley & Ritter (2002).

<sup>11</sup>Plural agreement is part of standard  $\phi$ -feature agreement which is analyzed as *feature copying* of uninterpretable  $\phi$ -feature on T probing downwards to the interpretable features on the two disjoint goals via c-command.

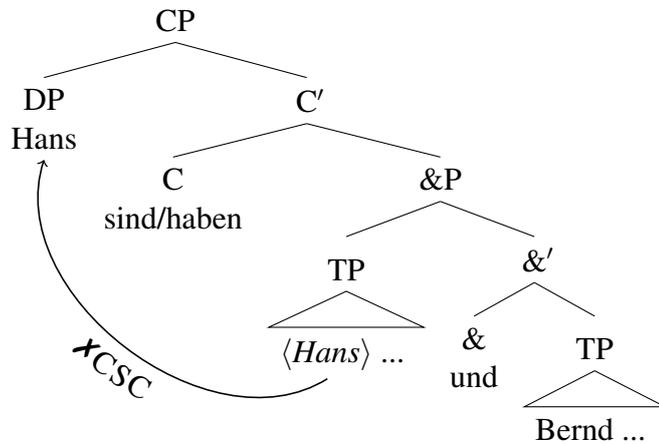
(31) Summative Agreement:3.2.3. *Violations of the CSC*

The current approach is able to provide an explanation for the difference in acceptability between extraposition and topicalization presented in the first section, the former is completely acceptable whereas the latter is completely unacceptable. Since we adopted a coordinate structure in chapter three that involves the functional projection of the coordinator, it becomes clear why topicalization causes the derivation to crash. Independent of whether CPs or TPs are coordinated, none of these structures allow the coordinator and the last conjunct to move because they do not form a constituent but an intermediate projection.<sup>12</sup> Extraposition in contrast is derived quite naturally since CE only appears to be a rightward movement operation, whereas in fact the surface position is the result of a coordination of complete sentences with subsequent ellipsis. In other words, the CE analysis presented here can explain the data on the basis of ellipsis and sharing alone, whereas topicalization needs movement as a necessary step.

Another important advantage of the new account is that it acts in accordance with the CSC, in contrast to the movement approaches discussed in section two. Recall that whenever a CE structure contains shared material, it has to provide landing positions outside of the coordinate structure in order for the shared material to move out. Thus, CE with plural agreement is derived as a coordination of TPs. Consequently, if one of the subjects moves up to spec,CP material gets extracted only out of one of the conjuncts. The ungrammaticality of (5) and (6) is thus due to a CSC violation, shown in (32).

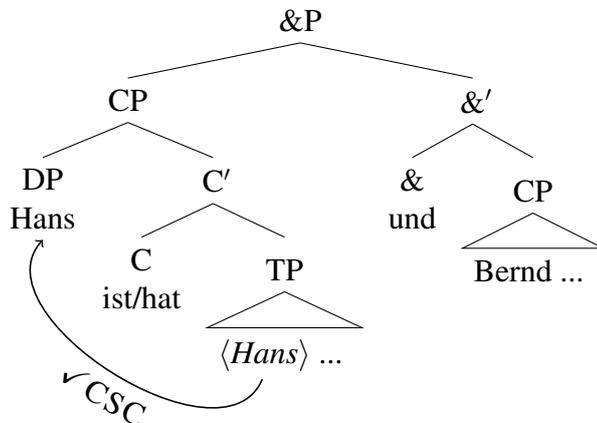
<sup>12</sup>In minimalist' terms, the coordinator and the last conjunct form a syntactic object that is neither minimal nor maximal.

- (32) \*Hans sind angekommen und Bernd. / \*Hans haben gehustet und Bernd.



In contrast, CE structures with singular agreement, as was shown in (1), do not depend on landing positions outside the coordination since they do not contain shared material. They can be analyzed as a coordination of CPs as well as a coordination of TPs. A coordination of CPs would then predict no violation of the CSC in case one of the subjects is raised to spec,CP. (33) gives the structure for (1).

- (33) Hans ist gestern angekommen und Bernd. / Hans hat gestern gehustet und Bernd.



Independent evidence for the two types of clausal coordination comes from intonation. Prinzhorn & Schmitt (2010) notice an intonational break/breath pause preceding the coordinator which is present in CE structures with singular agreement but not with plural agreement, see (34). Intonational breaks indicate intonation phrase boundaries. While it has been argued that intonation phrases are mapped to root clauses (Downing 1970; Nespor & Vogel 1986), Truckenbrodt (2005) provides experimental evidence for German that speakers mark intonation phrase boundaries also at the clausal level (see also Truckenbrodt 2015). Thus, a pause is predicted in (33) but not in (32) since only in the former does a complete CP precede the coordinator but not in the latter.

- (34) Gestern ist/\*sind Hans angekommen | und Bernd.  
 yesterday be.3SG/be.3PL Hans arrived and Bernd  
 ‘Yesterday Hans arrived, and Bernd.’

Different types of clausal coordination can also be proven by substituting the DP in the second conjunct with an interrogative *wh*-phrase (based on a test by Ott & de Vries 2016:650). The substitution should not be possible in CE structures with plural agreement since the second conjunct has to provide an underlying CP structure in order for *wh*-movement to take place. This prediction is borne out, see (35). The effect gets strengthened by the juxtaposition of two different speech acts – again, a scenario that is only possible if two separate CPs are coordinated as shown in (33).

- (35) A: I know which of the students passed the exam. Do you have an idea or do you want me to tell you?  
 B: Ich vermute, gestern hat/\*haben Hans bestanden – und welcher noch?  
 I suspect yesterday have.3SG/have.3PL Hans passed and who.else  
 ‘I suspect Hans passed the exam yesterday – and who else?’

As this section has shown, with the help of the CSC the current approach is able to provide an explanation for the whole data set presented in section 1 while also shedding light on the lack of topicalization data. The next section will provide additional evidence that support the hybrid approach on conjunct extraposition.

### 3.3. Further Evidence from Collective Predicates and Possessive Pronouns

After giving a full account of the data set in (3)-(6), I will now provide additional data that supports the hybrid account. For the participles in (3)-(6), PF-deletion of their second occurrences was assumed since they do not show agreement with the subject and thus do not have to be multiply dominated. However, there are certain types of verbs that lexically require their subjects to be plural since they yield a *collective* interpretation, compare the distributive verb *move* in (36) to the collective verb *gather* in (37).

- (36) a. John and Mary moved the car.  
 b. John moved the car and Mary moved the car.  
 (37) a. John and Mary gathered in the classroom.  
 b. \*John gathered in the classroom and Mary gathered in the classroom.

A collective-reciprocal reading of predicates is achieved via reciprocal verbs such as *collide* or *meet*. Some of these verbs come with a reciprocal anaphor such as *each other* or *together* in order to ensure their reciprocal meaning (Hoeksema 1983:68). Often these verbs have transitive counterparts, from which they need to be distinguished. Usually, these reciprocal constructions are taken to be quantificational statements (see Heim et al. 1991a,b; Schwarzschild 1996). A collective predicate is reciprocal, if the addition of a reciprocal anaphor is meaning preserving (Schwarzschild 1996:104). In (38) the meaning is preserved since John and Mary met each

other in (38-a) as well as in (38-b). In (39), however, John and Mary might be talking to other people in (39-a) but to each other in (39-b).

- (38) a. John and Mary met.  
 b. John and Mary met each other.
- (39) a. John and Mary talked.  
 b. John and Mary talked to each other.

Following Link (1983:307) and Schwarzschild (1996:60), I assume that plural DPs as well as the conjunction of singular DPs denote plural individuals under which a collective predicate can be licensed.

In the present account, CE structures containing collective or collective-reciprocal predicates are predicted to be ungrammatical if the predicate does not move out of the coordinate structure. The examples in (40)<sup>13</sup> and (41)<sup>14</sup> confirm this prediction.

- (40) \*Auf der Fähre haben dein Vater beisammengesessen und dein Bruder.  
 on the ferry have.3PL your father sat.together and your brother  
 ‘Your father and your brother have sat together on the ferry.’
- (41) Beisammengesessen haben dein Vater auf der Fähre und dein Bruder.  
 sat.together have.3PL your father on the ferry and your brother  
 ‘Your father and your brother have sat together on the ferry.’

As mentioned above, reciprocal verbs can come with a reciprocal anaphor in order to ensure their reciprocal meaning. If the reciprocal anaphor triggers the collective-reciprocal reading it is expected that the anaphor alone can save the derivation. This prediction is borne out, see (42)<sup>15</sup>.

<sup>13</sup>Prinzhorn & Schmitt (2010) have different intuitions here. For them, a CE structure that contains a non-moved reciprocal predicate is grammatical. The example they discuss is given below.

- (i) Gestern sind der Lastwagen zusammengestoßen und der Geländewagen.  
 yesterday be.3PL the truck collided and the SUV  
 ‘Yesterday, the truck and the SUV collided.’ (Prinzhorn & Schmitt 2010:165)

A questionnaire, conducted with 36 participants, testing (i) and similar reciprocal CE structures, however, could not confirm the judgement in (i). Reciprocal CE structures with the predicate inside the &P were judged significantly less grammatical than non-reciprocal CE structures.

<sup>14</sup>In this case the shared constituent is the whole VP which only contains the unergative *beisammengesessen*, assuming that the subjects are first-merged outside the VP as specifiers of *vP*. A possible complication with unaccusative reciprocals which show the same pattern as in (40) and (41), see (i) and (ii), can be overcome with the syntax for argument structure proposed in Lohndal (2014) which introduces even internal arguments as specifiers of separate functional heads.

- (i) \*In dem Buch sind Seite 1 aneinandergesetzt und Seite 2.  
 in the book be.3PL page 1 stuck.together and page 2  
 ‘Page 1 and page 2 are stuck together in the book.’
- (ii) Aeinandergesetzt sind Seite 1 in dem Buch und Seite 2.  
 stuck.together be.3PL page 1 in the book and page 2  
 ‘Page 1 and page 2 are stuck together in the book.’

<sup>15</sup>The original observation made in (42-a) and (42-b) comes from Prinzhorn & Schmitt (2010:186) but lacks an

- (42) a. \*Gestern haben Hans einander geschlagen und Bernd.  
 yesterday have.3PL Hans each.other hit and Bernd  
 b. Gestern haben einander Hans geschlagen und Bernd.  
 yesterday have.3PL each.other Hans hit and Bernd  
 c. Einander haben gestern Hans geschlagen und Bernd.  
 each.other have.3PL yesterday Hans hit and Bernd  
 ‘Yesterday Hans and Bernd hit each other.’

Finally, evidence from multiply bound possessive pronouns shows us that direct objects have to move out of the coordinate structure as well in case they are multiply dominated. The minimal pair, originally introduced in (7) and (8) and repeated here in (43) and (44), provides an example for a CE structure in which a direct object is multiply dominated and thus has to move out of the sharing structure. Multi-dominance is made visible on the possessive pronoun which can only be multiply bound by the two subjects in (43) but not in (44).

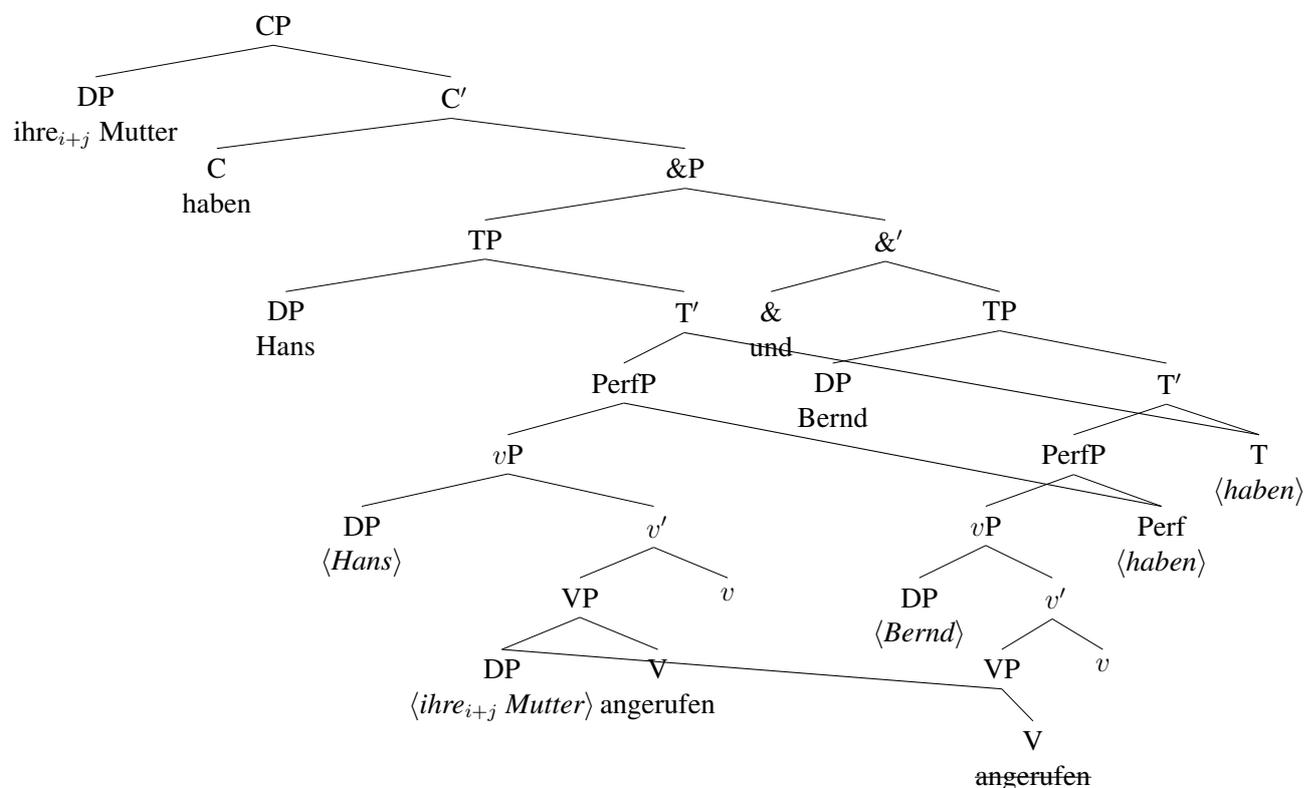
- (43) Ihre<sub>i+j</sub> Mutter haben gestern Hans<sub>i</sub> angerufen und Bernd<sub>j</sub>.  
 POSS.3PL mother have.3PL yesterday Hans called and Bernd  
 ‘Yesterday only Hans called their mother, and Bernd.’  
 (44) \*Gestern haben Hans<sub>i</sub> ihre<sub>i+j</sub> Mutter angerufen und Bernd<sub>j</sub>.  
 yesterday have.3PL Hans POSS.3PL mother called and Bernd  
 ‘Yesterday only Hans called their mother, and Bernd.’

The CE structure for multiply bound possessives is given in (45).

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explanation. In (42-b) the anaphor adjoins to the coordinate phrase.

(45) CE with a multiply bound possessive pronoun:



#### 4. The CE hybrid approach in action

After the discussion in section three, it should have become clear that, in order to give a full account of conjunct extraposition, we need both ellipsis and multi-dominance as explanatory means. To determine which constituents are in fact multiply dominated, some diagnostics are provided in this section. These tests are based on the idea that a multiply dominated constituent is only generated once whereas a constituent in an ellipsis structure is generated more than once (Wilder 2008, Barros & Vicente 2011). In order to distinguish multiply dominated constituents from ATB-moved constituents, I will take summative agreement as a criterion which only the former can show but not the latter.

##### 4.1. Sloppy Identity

Sloppy identity effects can arise between an elided pronoun and its antecedent (Ross 1967), as it is commonly the case in ellipsis structures (Sag 1976; Williams 1977; Partee 1978). Such ellipsis cases can get a sloppy and a strict reading, an example is given in (46).

- (46) John shot himself and Bill did too.  
 a. strict reading: John shot John and Bill shot John.

- b. sloppy reading: John shot John and Bill shot Bill. (Williams 1977:116)

A sloppy reading occurs if there are two occurrences of one constituent where the elided occurrence is not identical to the antecedent. If there is only one constituent in the first place, as it is the case in MD structures, a sloppy identity reading should be blocked altogether (Barros & Vicente 2011). CE with singular agreement allows the strict as well as the sloppy reading, see (47). The continuation in (47) shows the sloppy reading.

- (47) Agreement singular: [✓ sloppy reading, ✓ strict reading]
- a. Seinen Hund hat Peter gestern ausgeführt und Bernd.  
his dog have.SG Peter yesterday take.out and Bernd  
'Yesterday Peter and Bernd have taken out their dogs.'
- b. Nur ein Hund durfte dabei ohne Leine laufen.  
only one dog was.allowed though without leash walk  
'Though only one dog was allowed to walk without a leash.'

Conjunct extraposition with plural verb agreement, however, generates a coordination of TPs in which the shared verb as well as the shared object moves out to C and spec,CP respectively. Since the MD analysis assumes only one constituent, the sloppy reading is predicted to be blocked, see (48).

- (48) Agreement plural: [✗ sloppy reading, ✓ strict reading]
- a. Seinen Hund haben Peter gestern ausgeführt und Bernd.  
his dog have.PL Peter yesterday take.out and Bernd  
'Yesterday Peter and Bernd have taken out his (Peters) dog.'
- b. #Nur ein Hund durfte dabei ohne Leine laufen.  
only one dog was.allowed though without leash walk  
'Though only one dog was allowed to walk without a leash.'

The continuation in (48) is impossible which in turn suggests that a sloppy reading for CE structures with plural agreement is blocked. The next test is based on relational adjectives.

#### 4.2. Relational Adjectives

Relational adjectives such as *different* and *similar* can have both an internal and external reading. The internal reading is only available if the adjective scopes over a plural NP or a coordination of TPs or VPs (Carlson 1987). The example in (49) shows the different readings.

- (49) a. Bob and Alice attend different classes.  
(i) internal reading: Bob attends Biology 101 and Alice attends Philosophy 799.  
(ii) external reading: Alice' and Bob's classes are different from some contextually salient classes.
- b. Alice attends different classes. [✗ internal, ✓ external]  
(adapted from Carlson 1987:532)

The current proposal predicts that the internal reading will be available for conjunct extraposition with plural agreement because the shared relational adjective obligatorily moves out of the coordination of TPs and thus scopes over it, which is shown in (50).<sup>16</sup>

- (50) Agreement plural: [✓internal, ✓external]
- a. Völlig verschiedene Songs haben Hans gestern gesungen und Bernd.  
completely different songs have.PL Hans yesterday sung and Bernd  
'Hans and Bernd sang completely different songs yesterday.'
  - b. Außer *Thriller*. Den haben beide gesungen.  
except *Thriller* this.one have both sung  
'Except *Thriller*, this one both of them have sung.'

In contrast, CE with singular verb agreement excludes an internal reading of the relational modifier, as can be seen in (51). This follows directly from the assumption that CE with singular agreement is generated as an ellipsis structure with two occurrences of the direct object which cannot be related internally because they do not scope over the whole coordination.<sup>17</sup>

- (51) Agreement singular: [✗internal, ✓external]
- a. Völlig verschiedene Songs hat Hans gestern gesungen und Bernd.  
completely different songs have.SG Hans yesterday sung and Bernd  
'Hans and Bernd sang completely different songs yesterday.'
  - b. #Außer *Thriller*. Den haben beide gesungen.  
except *Thriller* this.one have both sung  
'Except *Thriller*, this one both of them have sung.'

#### 4.3. Summative interpretation of quantifiers

Wilder (2008) points out that quantifiers can receive a summative interpretation in RNR structures. A multi-dominance account can provide an explanation since it assumes that there can only be one constituent if it is shared between structures. This is shown in the following example. The underlying structure for an ellipsis account is shown in (52-b) which evidently cannot provide an explanation for the summative reading that (52) also has, as shown in (52-a).

- (52) Mary bought and John stole a total of fifteen cars.
- a. summative reading: Mary bought five cars and John stole ten cars.
  - b. non-summative reading: Mary bought a total of fifteen cars and John stole a total of fifteen cars. (Wilder 2008:253)

<sup>16</sup>See also Barros & Vicente (2011:5) for a multi-dominance approach for RNR structures which seem to provide internal readings as well.

<sup>17</sup>The data is somewhat inconclusive here because e.g. Sabbagh (2007:370) gives the following example with an external as well as an internal reading of the relational modifier.

(i) A different Smiths song is performed in my church and played in my favourite club.

Applying this test to CE yields the expected result: plural verb agreement creates a sharing structure in which the direct object with the quantifier is shared as well. Thus, the summative reading is possible and (53-b) can follow accordingly.

- (53) Agreement plural: [ $\checkmark$  summative reading,  $\times$  non-summative reading]
- a. Insgesamt zehn Fragen haben Maria in der Prüfung beantwortet und Peter.  
a.total.of ten questions have.PL Maria in the exam answered and Peter  
'A total of ten questions were answered by Maria and Peter.'
  - b. Fünf für Maria und fünf für Peter.  
five for Maria and five for Peter  
'Five for Maria and five for Peter.'

CE with singular agreement in (54), however, does not allow the summative reading because in the ellipsis structure two occurrences for the quantified object have to be assumed, hence only the non-summative reading is possible.

- (54) Agreement singular: [ $\times$  summative reading,  $\checkmark$  non-summative reading]
- a. Insgesamt zehn Fragen hat Maria in der Prüfung beantwortet und Peter.  
a.total.of ten questions have.SG Maria in the exam answered and Peter  
'A total of ten questions were answered by Maria and Peter.'
  - b. #Fünf für Maria und fünf für Peter.  
five for Maria and five for Peter  
'Five for Maria and five for Peter.'

## 5. Conclusion

The present account provides an analysis for conjunct extraposition. The proposal is based on a bare argument ellipsis account which provides an explanation for most of the CE cases. With the additional assumption of multiple dominance the hybrid account is able to explain CE structures with plural agreement on the verb and the possessive pronoun, the distribution of collective predicates and a range of other phenomena such the unavailability of sloppy identity, internal readings of relational adjectives, and summative readings of quantifiers in CE. In case a constituent is multiply dominated, it has to move out of the coordination, due to linearization. Unlike the presented movement approaches the hybrid MD/ellipsis account acts in accordance with the CSC.

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**Agree and Minimality in the DP**  
The challenge of the *Cazzo-of-N* construction in Italian

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This paper discusses a previously unnoticed binominal construction from Italian, termed the *Cazzo-of-N* construction (CoN), consisting of an expressive noun ( $N_1$ ), prepositional *di* ‘of’, and a noun contributing the descriptive content ( $N_2$ ). Unexpectedly,  $\phi$ -agreement of the determiner heading the complex DP obligatorily goes with the structurally lower  $N_2$  in apparent violation of Minimality, presenting a challenge for versions of minimalist grammar (Chomsky 1995, 2000) where  $\phi$ -feature co-variation is uniformly the result of Agree. This paper identifies core features of the construction on which it bases two alternative accounts to resolve the Minimality-disobeying agreement pattern, the first arguing for incorporation of the  $N_1$  due to deficiency, the second for a functional layer hiding the  $N_1$ .

1. Introduction

The goal of this paper is to investigate a previously undescribed binominal construction of Italian. I term this construction the *Cazzo-of-N* construction (CoN). In linear order, the CoN is formed by a determiner, an expressive noun, the preposition *di* ‘of’ and the noun contributing the descriptive content. This is shown in (1), where *una* is the determiner, *cazzo* is the expressive noun  $N_1$ , *di* is prepositional *di* ‘of’, and *banana* is the descriptive noun  $N_2$ .<sup>1</sup>

- (1) Una cazzo di banana.  
a dick of banana  
‘A fucking banana.’

The overall meaning added by *cazzo di* in (1) can be equated to English *fucking* or *damn*. What is of primary interest in this paper, is the pattern of nominal concord (to which I will henceforth

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<sup>1</sup>Italian and German data are my own unless otherwise indicated. I am a native speaker of both. My Italian is what can be called the Southern Standard of the Tuscan dialect. The general patterns were checked with other native speakers.

refer to as *agreement* in line with the theoretical assumption that it is driven by the operation Agree). The regular pattern of concord in Italian has the determiner and adjectives co-vary in  $\phi$ -features with the noun. This is shown for a simple noun phrase in (2).

- (2) I            saporit-i    fungh-i            porc-in-i            maremman-i.  
 the.M.PL tasty-M.PL mushroom-M.PL edible.boletus-M.PL Maremman-M.PL  
 ‘The tasty Maremman porcini mushrooms.’

In the case of a simple binominal, such as ‘teacher of math’, all elements which linearly precede the prepositional element co-vary with the  $N_1$ , *insegnante* ‘teacher’ in (3).

- (3) Il/\*La            bellissim-o/\*-a            insegnante    di matematic-a.  
 the.M.SG/\*F.SG handsome.SUP-M.SG/\*-F.SG teacher.M.SG of maths-F.SG  
 ‘The very handsome teacher of maths.’

The CoN, however, exhibits a different and unexpected pattern: the determiner obligatorily co-varies in  $\phi$ -features with the descriptive noun ( $N_2$ ). This is further shown in (4), where the  $N_1$  *cazzo* ‘dick’ remains masculine singular and the determiner is feminine plural as the  $N_2$  *banana* ‘banana’.

- (4) Dell-e        cazz-o        di banan-e.  
 PART-F.PL dick-M.SG of banana-F.PL  
 ‘Some fucking bananas.’

Furthermore, this is true through all permutations of gender and number and irrespective of the  $\phi$ -features of the various  $N_1$ s that can be chosen, cf. (5a) for a feminine singular  $N_1$  and (5b) for a masculine plural noun.

- (5) a. Un        minchi-a di fake.  
 a.M.SG dick-F.SG of fake.M.SG  
 ‘A fucking fake.’  
 b. Un’        accident-i di banan-a  
 a.F.SG curse-M.PL of banana-F.SG  
 ‘A fucking banana.’

The theoretical challenge of this pattern consists in the fact that application of the coordination test indicates that the preposition and the  $N_2$  form a constituent to the exclusion of the  $N_1$ . In most cases the preposition *di* is repeated, and in some cases, as in (6), even obligatorily so.<sup>2</sup>

- (6) Mi        hanno    proprio rotto    [ste cazzo di mosche e \*(di) zanzare]!  
 me.DAT have.3PL really    annoyed these dick of flies    and of    mosquitoes  
 ‘They have really got on my nerves these fucking flies and mosquitoes!’

<sup>2</sup>Non-repetition of the preposition is rather restricted and seems to be limited to cases where there is a unitary reading of the two conjoined elements, as two people being late together, rather than being late independently of one another. An example that may fit to such a scenario is given in (i).

- (i) Ma sti        cazzo di Doliana e    (di) Aderucci ’ndo stanno?!  
 but those dick    of Doliana and    of Aderucci where be.3PL  
 ‘Where are those fucking Doliana and Aderucci?’

Based on this fact, it is plausible to attribute the CoN the preliminary structure given in (7).

- (7) [ D[ $\phi$ :ab] [ N<sub>1</sub>[ $\phi$ :cd] [ of N<sub>2</sub>[ $\phi$ :ab] ] ] ]

Taking the minimalist view that all systematic co-variation of morpho-syntactic features is the result of the operation Agree, and given that Agree is subject to Minimality (e.g. in terms of closest c-command, see below), the CoN is problematic. To see why precisely we must look at the definition of Agree, given in (8) (cf. Chomsky 2000:122–123) (cf. Zeijlstra 2012).

- (8) *Agree*  
 $\alpha$  can agree with  $\beta$  iff:
- $\alpha$  carries at least one unvalued and uninterpretable feature and  $\beta$  carries a matching interpretable and valued feature.
  - $\alpha$  c-commands  $\beta$
  - $\beta$  is the closest goal to  $\alpha$
  - $\beta$  bears an unvalued uninterpretable feature.

*Closeness* in (8c) is defined as follows (cf. Chomsky 2000:122):

- (9) A matching feature G is closest to P if there is no G' in the c-command domain of P such that G is in the c-command domain of G'.

The CoN relates in the following way.  $\alpha$  is the probe situated on the determiner.  $\beta$  is the N<sub>2</sub> as it is the noun with which the determiner co-varies. The matching condition (8a) is satisfied as D bears an uninterpretable  $\phi$ -feature [ $*\phi : *$ ],<sup>3</sup> and the N<sub>2</sub> bears a matching set of  $\phi$ -features. The c-command condition (8b) is satisfied considering, e.g., that D can embed two coordinated constituents containing an expressive noun. This suggests that in the simple case D embeds (and therefore c-commands) the constituent containing N<sub>1</sub>, *di* and N<sub>2</sub>. An example is given in (10).

- (10) Le due cazzo di banane e tre cazzo di pesche che stavano in tavola (le  
 the two dick of bananas and three dick of peaches that were on table them  
 hai mangiate te?).  
 have.2SG eaten you  
 ‘The two fucking bananas and (the) three fucking peaches that were on the table – did you eat them?’

The minimality condition (8c) is problematic. The N<sub>1</sub> is closer to D than the N<sub>2</sub>: the N<sub>1</sub> asymmetrically c-commands the N<sub>2</sub>, which is contained in the constituent also containing *di*.

What is often termed the Activity Condition, (8d), may come to our rescue here. It is not immediately clear whether the N<sub>1</sub> bears an undischarged structure-building (uninterpretable) feature at the time in the derivation when D probes for  $\phi$ -features. However, the problem holds equally for the N<sub>2</sub> and for any other noun in Italian as case, the primary suspect, is not morphologically marked on nouns throughout the language. Assuming then that Ns as well as Ds in Italian carry an unvalued syntactic case feature, even though it is realised overtly only on pronouns, we are back to the problem of violating the Minimality requirement of (8c).

<sup>3</sup>I follow the Leipzig notation for structure-building features to avoid the discussion on the interpretability of feature (cf. Heck & Müller 2007). [ $*F*$ ] is a probe feature that triggers Agree, [ $\bullet F \bullet$ ] is a feature triggering (internal or external) Merge.

In section 2, I review the general properties of the CoN. In section 3, I discuss the range of analyses that might explain why this construction seems to violate Minimality on the surface, ultimately aiming at rescue this principle of grammar. The two analyses which I focus on are the following: In the first analysis, I propose that the  $N_1$  is structurally deficient with the effect that it must incorporate into the prepositional element at a point in the derivation where incorporation will render the  $N_1$  invisible for later probing. In the second analysis, I propose that there is a designated functional layer with which the  $N_1$  must combine prior to combining with the  $N_2$ . This functional layer ensures that the  $N_1$  receives the right expressive interpretation and renders the  $N_1$  too deeply embedded to intervene in later probing. In section 4, I compare and evaluate the two competing analyses. In section 5, I conclude.

## 2. General Properties of the CoN and differences to other binominals

In this section, I discuss some of the properties I deem to be core to the *cazzo-of-N* construction. In particular, I show that the CoN differs in meaning as well as in its structural properties from other known binominal constructions such as the Qualitative Binominal NP (QBNP, also known as N-of-an-N, cf. den Dikken 2006), the kind-of-N construction (KoN, Zamparelli 1998) and the Pseudopartitive construction (PsP, cf. van Riemsdijk 1998).

### 2.1. Meaning

The semantics of the CoN differs from other constructions in that the  $N_1$  is an *expressive* in the sense of Potts (2007). Informally, the overall semantic contribution of the  $N_1$  corresponds to an emphatic attitude by the speaker towards the expression that follows it as well as towards the situation as a whole. The attitude can range from anger to amazement. The  $N_1$  of the CoN can be shown to fulfil all of Potts' formal tests for being an expressive, i.e. it exhibits the properties of *independence*, *nondisplaceability*, *perspective dependence*, *descriptive ineffability*, *immediacy* and *repeatability*. The *independence* property refers to the fact that the expressive content of the  $N_1$  does not and cannot affect the descriptive content of the  $N_2$ . This is to say that the descriptive content of (11a) and (11b) are exactly the same, namely just a fly.

- (11) a. Una cazzo di mosca.  
       a dick of fly  
       'A fucking fly.'
- b. Una mosca.  
       a fly  
       'A fly.'

The *nondisplaceability* property refers to the fact that the emphatic attitude expressed by the expressive is invariably anchored to the utterance situation. For example, in (12), the expressive content of the  $N_1$  is restricted to the moment of utterance and cannot refer to previous times the bottle was dripping as the utterer was pouring the wine. In fact, he might feel that way only now that he is saying it while being relaxed about the situations before.

- (12) Ogni volta che verso del vino, la cazzo di bottiglia gocciola.  
 every time that pour.1SG PART wine the dick of bottle drip.3SG  
 ‘Whenever I pour wine, the damn bottle drips.’

The *perspective dependence* property refers to the fact that, though in general the perspective is the speaker’s, it can sometimes also be a reflection of some other person’s perspective. In (13), for instance, *cazzo* reflects the speaker’s father’s emotionally heightened state towards the neighbour’s dogs.

- (13) Il mi babbo m’ ha detto di non giocare=ci più con quei cazzo di canacci  
 the my dad me has told C not play=with anymore with those dick of dogs.PEJ  
 del vicino.  
 of.the neighbour  
 ‘My dad has told me not to play with the neighbour’s fucking dogs anymore.’

The *descriptive ineffability* property refers to the fact that speakers are never fully satisfied with the paraphrases that they can give to expressive terms by using descriptive terms. The *immediacy* property further refers to the fact that the expressive content is delivered by the expressive term the moment it is uttered and that this cannot be cancelled by negating it. This can be seen in (14).

- (14) Il tuo cazzo di cane mi ha morso ieri. (# Ma oggi non è un cazzo di cane  
 the your dick of dog me has bitten yesterday but today not is a EXPR of dog  
 perché è stato bravo oggi.)  
 because is been good today  
 ‘Your damn dog bit me yesterday. (# But he’s no damn dog today because he behaved today.)

Finally, the *repeatability* property refers to the fact that repeating an expressive term is not redundant but rather strengthens the emotive content, cf. (15a). Repeating a phrase such as *sono furioso* ‘I’m mad’ in (15b) feels redundant even though it adds arguably the same overall meaning as *cazzo* in (15a).

- (15) a. Cazzo, mi sono dimenticato le cazzo di chiavi nella mia cazzo di  
 dick me.DAT be.1SG forgotten the dick of keys in.the my dick of  
 macchina!  
 car  
 ‘Fuck, I forgot my fucking keys in my fucking car.’  
 b. #Sono furioso! Mi sono dimenticato le chiavi. Sono furioso! Sono  
 be.1SG furious me.DAT be.1SG forgotten the keys be.1SG furious be.3PL  
 nella mia macchina. Sono furioso!  
 in.the car be.1SG furious  
 ‘# I’m mad! I forgot my keys. I’m mad! They’re in the car. I’m mad!’

The property of repeatability is an especially distinguishing feature of the expressives that are discussed in this paper. Potts treats the English expressives *damn* and *bastard* alike. For the purposes of this paper, it is important, however, to differentiate between two types: expressive nouns of the type of Italian *cazzo* and *cavolo*, and expressive nouns of the type of Italian *bas-*

*tardo* ‘bastard’ and *merda* ‘shit’. As shown above, the former can function as the  $N_1$  of the CoN and exhibit the property of repeatability. The latter, on the other hand, do not exhibit the property of repeatability and do not occur as the  $N_1$  of the CoN. Rather, they occur as the  $N_1$  of den Dikken’s QBNP (see below). The repeatability of an expressive noun therefore seems to be a necessary condition for occurring as the  $N_1$  of the CoN.

Turning to the comparison to other binominals, one can immediately see how the KoN and the PsP differ from the CoN. The  $N_1$  of the KoN is a *kind*-denoting noun, while the  $N_1$  of the PsP denotes a quantity or a measure. Examples are given in (16a) and (16b), respectively.

- (16) a. Un tipo di ragazza. *Kind-of-N*  
           a type of girl  
           ‘A type of girl.’  
       b. Un monte di ragazze. *Pseudopartitive*  
           a mountain of girls  
           ‘A lot of girls.’

The semantics of the  $N_1$  of the QBNP shares some of the expressive properties of the CoN (cf. e.g. *that bastard Kresge* in Potts 2007). An example is provided in (17).

- (17) Un fiore di ragazza. *Attributive Qualitative Binominal NP*  
       a flower of girl  
       ‘A flower of a girl.’

It fails, however, to fulfil at least the test of *repeatability*, as *fiore* ‘flower’ in (17a) cannot be repeated indefinitely, and the test of *descriptive ineffability*, as there is a describable and intelligible contrast between using e.g. ‘flower’ vs. ‘jewel’, even if only subtly so. Finally, there is a predicational relationship between the  $N_1$  and the  $N_2$  of the QBNP, which is missing in the CoN. The example in (17) can be expressed by a sentence involving a copula, while this is generally impossible for the CoN. The contrast is given in (18), where (18a,c) display sentential versions of the QBNP, and (18b,d) the impossible parallel for the CoN (I do not give a translation as the examples are only understandable in the literal meaning but completely unintelligible with the intended expressive reading).

- (18) a. La ragazza è un fiore.  
           the girl is a flower  
           ‘The girl is a flower.’  
       b. #La mosca è un cazzo.  
           the fly is a dick  
           ‘(Intended) The fly is annoying.’  
       c. È proprio un fiore questa ragazza.  
           is really a flower this girl  
           ‘This girl really is a flower.’  
       d. #È proprio un cazzo questa mosca.  
           is really a dick this fly  
           ‘(Intended) The fly really is annoying.’

## 2.2. Agreement

The difference that is of primary interest in this paper is the pattern exhibited by  $\phi$ -agreement. In the CoN, the determiner agrees in  $\phi$ -features with the  $N_2$  rather than with the  $N_1$ , leaving the  $N_1$  unchanged. This is shown in (19), where the determiner is F.PL as the  $N_2$ , while the  $N_1$  remains M.SG.

- (19) dell-e cazz-o/\*-i di banan-e.  
 PART-F.PL dick-M.SG/\*-M.PL of banana-F.PL  
 ‘Some fucking bananas.’

In the QBNP, the  $N_1$  has the same number as the  $N_2$  and the determiner agrees in all features with the  $N_1$ . In (20), for instance, the  $N_2$  *ragazze* ‘girls’ is plural so the  $N_1$  *fiori* ‘flowers’ must be plural, too. The determiner then picks up number and gender from the  $N_1$  *fiori* ‘flowers’, yielding M.PL agreement.

- (20) Que-i fior-i di ragazz-e.  
 that--M.PL flower-M.PL of girl-F.PL  
 ‘(Lit.) Those flowers of girls.’

In the KoN, the  $N_1$ ’s number is independent of that of the  $N_2$  and the determiner agrees in all features with the  $N_1$ . This is shown in (21), where the determiner has M.SG agreement reflecting the  $\phi$ -features of the  $N_1$ .

- (21) Un tip-o di ragazz-e.  
 a.M.SG type-M.SG of girl-F.PL  
 ‘A type of girls.’

Some  $N_1$ s of the PsP exhibit a slightly more interesting agreement pattern where the verb agrees in gender with the  $N_2$  rather than with the  $N_1$ . In (22), for instance, the participle agreement is F.SG rather than M.SG. This seems similar to the CoN’s agreement pattern. It is still different, however, as the determiner has to agree in full with the  $N_1$ .

- (22) C’ è venut-a/\*-o un/\*un-a sacco di gente  
 there is come-F.SG/\*-M.SG a.M.SG/a-F.SG bag.M.SG of people.F.SG  
 ‘A lot of people came.’

## 2.3. Modification

Another core difference between the CoN and the other binominal constructions is to what extent the  $N_1$  may be modified. In the KoN, the  $N_1$ s may be generally modified by appropriate adjectives. This is shown in (23).

- (23) un tip-o stran-o di macchin-a  
 a-M.SG kind-M.SG strange-M.SG of car-F.SG  
 ‘A strange kind of car.’

The QBNP behaves in the same way as the KoN. The  $N_1$  can be generally modified by appropriate adjectives, cf. (24).

- (24) que-l gioell-o prezios-o di ragazz-a  
 that-M.SG jewel-M.SG precious-M.SG of girl-F.SG  
 ‘That precious jewel of a girl.’

The range of adjectives with which the  $N_1$  of the PsP can be modified is more restricted. In particular, post-nominal adjectives can be more or less acceptable depending on the particular  $N_1$ . For instance, I believe that post-nominal modification of *sacco* ‘bag’ is only possible with its lexical container-denoting meaning, but not in its semantically bleached pseudopartitive meaning. Similarly with *monte* ‘mountain’, this becomes difficult when what is being predicated over is not often shaped like a mountain or pyramid, cf. (25a) vs. (25b).

- (25) a. un monte di gente  
 a mountain of people  
 ‘A lot of people.’  
 b. #un monte enorme di gente  
 a mountain enormous of people  
 ‘(Intended) A massive amount of people.’

What remains generally possible, however, is modification by pre-nominal adjectives, as for example in (26). In this case, the adjective always receives a degree interpretation rather than a literal one.

- (26) un bel monte di gente  
 a.M.SG nice.M.SG mountain.M.SG of people.F.SG  
 ‘(Lit.) A good lot of people.’

The  $N_1$  of the CoN again exhibits a different behaviour. It cannot be modified as a phrase, nor by phrasal adjectives in post-nominal or pre-nominal position.

- (27) a. \*dell-e cazz-o {bel, brutt-o, maledett-o, ...} di banan-e  
 PART-F.PL dick-M.SG nice.M.SG ugly-M.SG damned-M.SG of banana-F.PL  
 b. \*dell-e {bel, brutt-o, maledett-o, ...} cazz-o di banan-e  
 PART-F.PL nice.M.SG ugly-M.SG damned-M.SG dick-M.SG of banana-F.PL

The only way in which the  $N_1$  of the CoN can be modified is by elements that attach derivationally, as e.g. the pejorative *-accio*, and compounding (or incorporating) elements such as *super-* ‘super’, *mega-* ‘mega’ and *gran-* ‘big’.

- (28) dell-e {stra-, super-, mega-, gran-} cazz- {-acci-} -o di banan-e  
 PART-F.PL extra- super- mega- grand- dick- -PEJ- M.SG of banana-F.PL  
 ‘Some (!)-fucking-(!) bananas.’

### 3. Delineating the space of analyses

In the following, the range of possible analyses will be restricted.<sup>4</sup> They will all assume a derivational model of syntax with realisational morphology and adopt the machinery in the literature following Chomsky (1995, 2000, 2001). In particular, I will assume (i) that structure is built derivationally and bottom-up by the operations Merge and Agree in order to satisfy featural requirements of (lexical or functional) syntactic material, (ii) that Minimality is an unviolable principle of grammar, and (iii) that all systematic feature co-occurrences are reflexes of the operation Agree.<sup>5</sup> Finally, I will divide the analyses in two camps, one which assumes direct locality between D and the N<sub>2</sub>, and one which assumes that the locality between D and the N<sub>2</sub> is only indirectly warranted as a result of the N<sub>1</sub>'s invisibility for probing.

#### 3.1. D and N<sub>2</sub> are local

One way of accounting for the non-local agreement pattern is by assuming that the determiner and the N<sub>2</sub> actually are local at a given point of the derivation and that Agree applies at exactly that moment. A priori, this scenario may occur either early or late in the derivation.

##### 3.1.1. Late locality

One way of achieving that the N<sub>2</sub> is local to the determiner late in the derivation is by movement. Leaving matters of linearisation aside for a moment, the N<sub>2</sub> can be thought to move to a position above the N<sub>1</sub> before D is merged. The N<sub>2</sub> would consequently be the closest goal for  $\phi$ -Agree from D. The only testable prediction that this analysis makes is that, after this movement step, the prepositional element *di* and the N<sub>2</sub> do not form a constituent to the exclusion of the N<sub>1</sub>. However, as was already shown in (6) in section 1, this is not the case. The example is

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<sup>4</sup>There are no previous accounts for the phenomenon discussed in this paper to the best of my knowledge. Accounts which deal with related problems are van Riemsdijk (1998), Español-Echevarria (1998) and den Dikken (2006). Van Riemsdijk aims at deriving the semi-functional status of the N<sub>1</sub> of certain binominal constructions by adopting an additional feature system of two binary features ([±G(rammatical), ±F(unctional)]), where elements that are [+G, -F] or [-G, +F] are special and remain unaffected by certain operations such as case assignment. This approach seems promising, but within an Agree-based system, it requires either writing this feature calculus into the definition of Agree, or positing these features on the probes whenever needed. Español-Echevarria assumes the presence of a silent noun in a position closer to the determiner to account for instances of seeming gender mismatches in Spanish (e.g. *el rata* 'the.M.SG mouse.F.SG' where this refers to a male person somehow associated to mice or mouse-like features). This options can be ruled out as compounds on the bases of *cazzo* or other expressives cannot be formed in Italian, while Italian parallels to Español-Echevarria's Spanish examples are well-formed. Finally, Den Dikken does not make any explicit reference to Agree in his account of the attributive QBNP. There, the determiner agrees in number with the N<sub>2</sub> while the N<sub>1</sub> remains invariant. This strongly resembles the pattern exhibited by the CoN construction. However, den Dikken simply assumes that a Num projection belonging to the N<sub>2</sub> rather than to the N<sub>1</sub> is generated on top of the small clause comprising the two nouns. Needless to say, such an approach straight out evades the problems and questions set out to be answered in this paper.

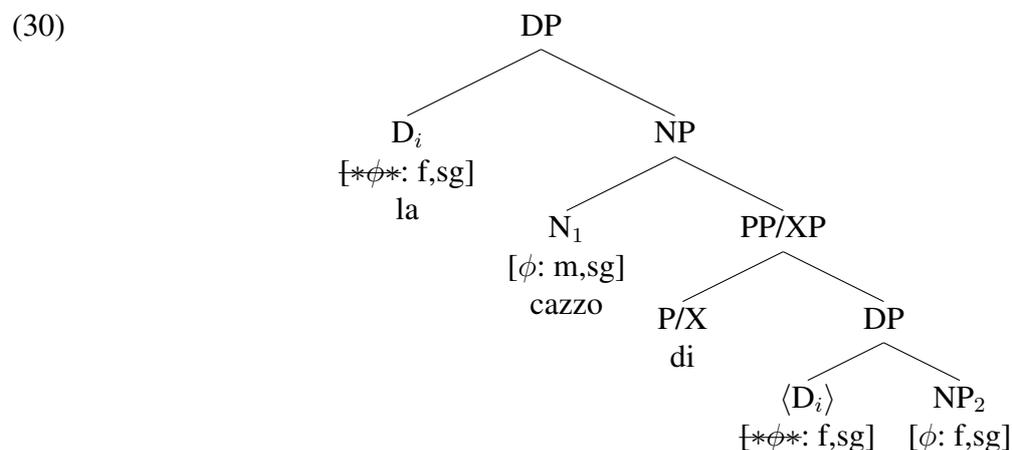
<sup>5</sup>I will specifically assume the more minimalist hypothesis that DP-internal  $\phi$ -feature co-occurrences are reflexes of the same operation responsible for verbal agreement and that therefore nominal concord is not the result of a different operation and/or a different module of grammar. I further take as empirical support for this claim the facts from Italian that (i) different inflection classes of masculine and feminine nouns respectively map to a single masculine and a single feminine marking on the determiner, and (ii) that this directly parallels the pattern in participial verb-noun agreement.

repeated in (29) and shows that the prepositional element *di* must be repeated under coordination, indicating that *di* and the N<sub>2</sub> do indeed form a constituent to the exclusion of the N<sub>1</sub>. As a consequence, I will exclude this approach.<sup>6</sup>

- (29) Mi hanno proprio rotto [ste cazzo di mosche e \*(di) zanzare]!  
 me.DAT have.3PL really annoyed these dick of flies and of mosquitoes  
 ‘They have really got on my nerves these fucking flies and mosquitoes!’

### 3.1.2. Early locality

Alternatively, the N<sub>2</sub> may be local to D early in the derivation. This can be achieved by assuming that the determiner is generated low with the N<sub>2</sub>. As a consequence, D can agree locally with the N<sub>2</sub> and only later reproject to head the whole construction. At that point, the determiners probe will be already satisfied, accounting for the opaque agreement pattern – a case of counterfeeding under this analysis. A sketch of the derivation is given in (30).



The strongest testable prediction of this analysis is that, since the determiner serves for both the construction as a whole and the N<sub>2</sub>, the N<sub>2</sub> itself should not be able have a separate determiner. Unfortunately, this prediction is not borne out. In fact, an informal survey searching for strings in Google showed that there are indeed cases where the lower nominal has its own determiner.<sup>7</sup> The results are given in table 1.<sup>8</sup> As a consequence of these findings, I will exclude this analysis.<sup>9</sup>

<sup>6</sup>In her review, Rodica Ivan (p.c.) notes that if *di* is rather a kind of case marker, *di* and N<sub>2</sub> would move together so that the constituency of *di* and N<sub>2</sub> would be preserved. I discard this possibility for the following reason: if the N<sub>2</sub> can move with its supposed case marking, I see no reason why it should not be able to further move out of the DP. This, however, is not possible in the CoN; see (46) in section 3.2.2. A further weak point of this approach, whether *di* is a case marker or an independent head, is that all of the properties which define the N<sub>1</sub> of the CoN that are summarised in section 4 must be derived independently from the agreement fact.

<sup>7</sup>Ideally, of course, the facts would be further tested with an acceptability-rating study.

<sup>8</sup>The Google string searches were carried out on 18th June 2015. They all had the form *det-1 cazzo di det-2*. All determiners were feminine to try to ensure through the agreement pattern that only *cazzo-of-N* constructions are found. The demonstratives used were *questa* ‘this’, *queste* ‘these’, *sta* ‘this’, *ste* ‘these’, *quella* ‘that’ and *quelle* ‘those’; the definite articles used were *la* ‘the.SG’ and *le* ‘the.PL’; the indefinite article used was *una* ‘a’.

<sup>9</sup>An attenuation of these facts is that, by far, in most cases the lower determiner is identical to the higher one. If one adopts the Copy Theory of movement (cf. Nunes 1995), such cases can be analysed as a spell-out of the lower copy of the movement/reprojection chain. Nonetheless, there are also technical difficulties with the reprojection

↓ high D / low D →	DEMONSTRATIVE	DEFINITE	INDEFINITE
DEMONSTRATIVE	*	13	3 <sup>a</sup>
DEFINITE	*	2130	*
INDEFINITE	1 <sup>b</sup>	17 <sup>b</sup>	4

<sup>a</sup>With QBNP meaning    <sup>b</sup>Mostly with NPI meaning

Table 1: Summary Google string search results for *D-cazzo-D*

### 3.2. $N_1$ is invisible for probing

One feature of the CoN construction is that the  $N_1$  remains invariably singular. This can be taken to indicate that the  $N_1$ 's  $\phi$ -features do not participate in the derivation in some relevant sense. In what follows, I will discuss three options to achieve this. The first assumes that the  $N_1$ 's  $\phi$ -features are plainly not represented in the syntax. The second assumes that the  $N_1$  is structurally deficient in the sense of Cardinaletti & Starke (1999) and that it therefore must incorporate rendering it invisible for later computation. The third option assumes that there is a designated functional category, *Expr*, which merges with certain roots to create expressives. The presence of this category interrupts the nominal projection in a way that the  $N_1$  can be no longer targeted by  $\phi$ -Agree.

#### 3.2.1. $N_1$ has no $\phi$ -features

Another viable approach is to assume that the  $N_1$  of the CoN actually has no  $\phi$ -features. In this line of reasoning, it is straightforward why the  $N_1$  is not a viable goal for  $\phi$ -agreement and does not intervene when D agrees with the  $N_2$ : there simply are no  $\phi$ -features to be targeted by any probe c-commanding the  $N_1$ . There are two clear predictions that this approach makes, one syntactic and one morphological. The syntactic prediction is that other dependencies that also rely on the presence of  $\phi$ -features cannot be established with the  $N_1$ . One such example is modification, either by adjectives or by relative clauses. A set of these obligatorily agree in  $\phi$ -features. As was partly shown in section 2.3, phrasal adjectives cannot modify the  $N_1$ , cf. (31) (=27b)). The same holds for relative clauses.

- (31) \*dell-e    {bel,        brutt-o,        maledett-o,    ...} cazz-o    di banan-e  
           PART-F.PL nice.M.SG ugly-M.SG damned-M.SG        dick-M.SG of banana-F.PL  
           ‘(Intended) Some (!)-fucking bananas.’

In section 2.3, it was also shown that in contrast the  $N_1$  can be modified by adjectives that combine derivationally or by incorporation. The example is repeated in (32).

- (32) dell-e        {stra-, super-, mega-, gran-} cazz- {-acci-} -o    di banan-e  
           PART-F.PL extra- super- mega- grand- dick- -PEG- M.SG of banana-F.PL  
           ‘Some (!)-fucking-(!) bananas.’

---

approach concerning the operational status of reprojection. The only principled approach would be to treat it as movement. In that case, however, it would be difficult to define a formal trigger for this type of movement. Also, it would face serious locality issues as for instance violations of the Head Movement Constraint (Travis 1984; Baker 1988).

An alternative generalisation could be that the adjectives in (32) can modify the  $N_1$  because they do not require  $\phi$ -agreement: *stra-*, *super-*, *mega-* and *gran-* remain invariant, while the pejorative *-accio* can be analysed as just *-acci-* and attaching directly to the root.

Analysing the  $N_1$  as lacking  $\phi$ -features altogether can therefore explain the split between the kind of elements that can modify the  $N_1$ . However, in order to keep these data as evidence, it is necessary to extend the requirement to agree in  $\phi$ -features to any adjective in Italian to those adjectives which do not exhibit  $\phi$ -agreement overtly. For instance, adjectives in *-e* do not show a gender distinction and loanword or acronymic adjectives do not have  $\phi$ -morphology at all. Modification by such adjectives is impossible nonetheless, as shown in (33a-b), respectively.

- (33) a. \*una cazzo dolente di bug  
 a.F.SG dick.M.SG hurting of bug.F.SG  
 '(Intended) A damn fucking computer bug.'
- b. \*una cazzo imba/gosu di bug  
 this.F.SG dick.M.SG very.strong of bug.F.SG  
 '(Intended) A damn fucking computer bug.'

This seems to suggest that the relevant distinction is not between adjectives that agree in  $\phi$ -features and those that do not, but rather between minimal and maximal categories (cf. Chomsky 1995:section 4.3). In addition, also the predictions for the morphological component are difficult.

The morphological prediction if the  $N_1$  has an empty  $\phi$ -feature specification is that only words which lack morphology that is dependent on a  $\phi$ -feature specification can serve as the  $N_1$  in the CoN. There is in fact at least one such word, *caspita*, which is a euphemism for *cazzo*. It's a word that is otherwise only used as an exclamation or as a negative polarity item (NPI) and it probably even lacks a word category. The other words are nouns. One of the defining properties of nouns is that they have  $\phi$ -features in syntax.<sup>10</sup> Nouns in Italian which are not recent loanwords always appear with a suffix containing gender and number (and probably 3rd person). In the case of *cazz-o*, the suffix is *-o/*. So far, the suffix was glossed as containing the categories M.SG. As I am assuming a realisational morphology, *-o/* must realise the features M.SG. From a very naive view, this is already impossible if there are no M.SG features in the syntax to be realised. As an alternative, a version of spell-out that is based on Distributed Morphology (DM; Halle & Marantz 1993) can be assumed.<sup>11</sup> There, insertion of an exponent (i.e. morphological realisation of a given syntactic context) only requires the exponent to be specified for a (non-proper) subset of the context in which it gets inserted, conforming with the *Subset Principle*.<sup>12</sup> This helps a little bit as the specification of *-o/* can now be empty, i.e. as in (34).

- (34) *-o/*  $\Leftrightarrow$  [ ]

<sup>10</sup>Whether  $\phi$ -features are stored in the lexicon, added in the numeration or very early on in the syntax – which can be recast as the question whether they are stored or computed – does not matter here (for a brief discussion see Chomsky 1995:section 4.2.2). What matters is the input to the morphological component.

<sup>11</sup>See also Harley & Noyer (1999) and references therein for a broad overview.

<sup>12</sup>The definition is as follows (Harley & Noyer 1999:5 citing Halle 1997):

“The phonological exponent of a Vocabulary Item is inserted into a morpheme. . . if the item matches all or a subset of the grammatical features specified in the terminal morpheme. Insertion does not take place if the Vocabulary Item contains features not present in the morpheme. Where several Vocabulary Items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen.”

A problem that remains nonetheless is that, even if the exponent */-o/* has an empty feature specification, it needs a syntactic environment – specifically one (or more fused) head(s) – into which it gets inserted. If the  $N_1$ 's  $\phi$ -features are not represented in syntax at all, */-o/* can simply not be inserted. We can avoid this problem temporarily by making use of inflection classes. Italian has various inflection classes spread across the two genders and the two numbers.<sup>13</sup> If we assume that inflection classes are represented at some point in syntax or post-syntax before Vocabulary Insertion applies, */-o/* may be inserted in that terminal. Similarly, the suffix */-a/* for the F.SG  $N_1$  *minchia*, a southern equivalent of *cazzo*, though it cannot also have an empty specification, it may be specified for the right inflection class feature as in (35).

(35) */-a/*  $\Leftrightarrow$  [INFL CLASS: II]

The problem arises in a new form with other expressive nouns: *accidenti* ‘curses’ and *capperi* ‘capers’. These two nouns are used in their plural form in the CoN. Since the singular was used as the default above, the plural cannot be empty too. On a standard treatment of number appearing on its own functional projection ‘Num’, we would run into a multitude of unsolvable problems as far as I can see: for the analysis to work, we need the plural feature to be present neither in the syntax nor in the exponent’s feature specification.<sup>14</sup> Pushing the idea further, I believe that the morphological problem can be solved by assuming a split in the syntactic representations of  $\phi$ . For instance, Kramer (2014) argues for a split between natural and grammatical gender and Kramer (2016) argues for a similar split for number, both on the basis of Afro-Asiatic and Amharic in particular. Assuming such a system, one can place the features that are necessary for spelling out the suffixes on different heads than the heads which host the actual  $\phi$ -features with which determiners and verbs agree. In particular, for the Italian plural expressives, as they are invariably plural, one may say that they have a grammatical plural feature on a head lower than Num(ber), e.g. on *n*. Grammatical gender, or inflection-class features in this case are hosted on *n*, too, or directly on the root. Such a split seems a reasonable assumption for Italian given that the gender features on D equal those on past participles, i.e. the output of Agree on D and participles is not affected by the inflection class of the noun goal, even if this information is reflected on the noun’s suffix. Nonetheless, accounting for other properties which will be discussed in the following sections will require the addition of more and more assumptions. As a consequence, this approach will be abandoned.

### 3.2.2. $N_1$ is structurally deficient

Another way to flesh out the idea that the  $N_1$  is deficient in some way is the following. The  $N_1$  lacks some portion of the structure: if not  $\phi$  itself then something else, so that it does not have a fully fledged nominal syntax. In terms of Cardinaletti & Starke (1999), this approach hypothesises that the  $N_1$  is structurally deficient. Cardinaletti and Starke show that weak pronouns and clitics behave differently from strong pronouns and full DPs in a number of syntactic

<sup>13</sup>For an overview, see e.g. Acquaviva (2009).

<sup>14</sup>For instance, one trick would be to specify */-o/* as empty and */-i/* as having just the inflection-class feature. This does not work, however, because */-i/* also spells out the plural of masculines ending in *-a* and in *-e*. It would have to be assumed that, in the plural, the inflection classes of *-a* and *-e* are impoverished in such a way to yield the inflection class of *-o*. This is not only not very illuminating, but also impossible: the Impoverishment rule requires the syntactic presence of plural, which is what we are trying to avoid here. For the operation Impoverishment see Halle & Marantz (1993); Harley & Noyer (1999).

properties. They propose that differences are linked to the structural size of the various types of pronominal elements, in particular that clitics are just  $\phi$ Ps and lack the D-layer. Building on this approach, one can make sense of the modification data repeated here as (36) and (37) in a different way. The contrast can be explained as due to the fact that *cazzo* is smaller than the category, and therefore of the wrong type of category, that the normal adjectives in (36) attach to, while the pejorative in (37) is derivational morphology and attaches to the root.<sup>15,16</sup>

(36) \*dell-e {bel, brutt-o, maledett-o, ...} cazz-o di banan-e  
 PART-F.PL nice.M.SG ugly-M.SG damned-M.SG dick-M.SG of banana-F.PL  
 ‘(Intended) Some (!)-fucking bananas.’

(37) dell-e cazz-acci-o di banan-e  
 some-F.PL dick-PEJ-M.SG of banana-F.PL  
 ‘Some fucking-(!) bananas.’

A contrast in their possibility to be modified is also mentioned by Cardinaletti & Starke (1999) for clitics and weak pronouns. While it is possible for the strong pronoun *lei* and the NP/DP *Maria* in (38b) to be modified by an adverbial, this is not possible for the weak pronoun *essa* in (38a).

(38) a. \*Anche/ solo essa è bella.  
 also only 3.SG.F.WEAK is pretty  
 b. Anche/ solo {lei, Maria} è bella.  
 also only 3.SG.F.STRONG Maria is pretty

Cardinaletti & Starke (1999) also list other tests. For instance, while it is possible to coordinate DPs, NPs and strong pronouns, it is impossible to coordinate clitics or weak pronouns.

(39) a. \*Lei ed essa sono belle.  
 3.SG.F.STRONG and 3.SG.F.WEAK are pretty  
 b. Lei<sub>i</sub> e {lei<sub>j</sub>, Maria} sono belle.  
 3.SG.F.STRONG and 3.SG.F.STRONG Maria are pretty

The same holds for the N<sub>1</sub> of the CoN. As seen before, there are a number of nouns that can occur as the N<sub>1</sub> of the construction, e.g. *cavolo* ‘cabbage’ and *cacchio* ‘poop’. However, the expressives cannot be coordinated, cf. (40).

(40) \*le cazzo e {cavolo, cacchio...} di banane  
 the dick and cabbage poop of bananas  
 ‘(Intended) The fucking and damned bananas.’

<sup>15</sup>Evidence in favour of such an analysis comes from the fact that this type of modification is also possible in V-N-compounds as in (i). For the other modifiers *stra-*, *super-*, *mega-* and *gran-*, a somewhat different analysis will be hinted at at the end of this section.

(i) Lui è proprio un {rompi-bottigli-e, rompi-bottigli-ett-e, rompi-bottigli-on-e}  
 he is really a break-bottle-F.PL break-bottle-DIM-F.PL break-bottle-AUG-F.PL  
 ‘He really is a breaker of (normal, small, large) bottles.’

<sup>16</sup>For discussion of the head vs. phrase distinction of the N<sub>1</sub> of pseudopartitives in the context of modification see Alexiadou et al. (2007:418,434–435); see also Vos (1999:chapter 6).

This behaviour contrasts once more with structures where a regular noun takes an NP complement, as in (41a,) and the QBNP construction, as in (41b). I judge the latter as a bit marked, but nonetheless grammatical.

- (41) a. Lui è un apprezzatore e amante di arte astratta  
 he is a appreciator and lover of art abstract  
 ‘He is someone who appreciates and is keen on abstract art.’  
 b. ?Lei è proprio un fiore e gioiello di ragazza  
 she is really a flower and jewel of girl  
 ‘She really is a flower and a jewel of a girl.’

Another parallel is that, just like weak pronouns and clitics (as opposed to strong pronouns), the  $N_1$  of the CoN cannot be contrastively focussed. Again, this is possible for regular binominals as in (42), and the QBNP construction, as in (43ab). The QBNP examples should be read in a context where one is contrasting metaphorical differences between being a flower-ish vs. a jewel-ish girl, for instance kind and indulging vs. radiant and exciting.

- (42) \*ste CAZZO di nuvole mi hanno proprio rotto (... le cavolo di nuvole no)  
 these EXPR of clouds me.DAT have really annoyed the EXPR of clouds not  
 (43) a. Lui è un APPREZZATORE di arte astratta (... non un amante)  
 he is an appreciator of art abstract not a lover  
 b. Lei è un FIORE di ragazza (... non un gioiello)  
 she is a flower of girl not a jewel

Overall, I take these data to suggest that the  $N_1$  of the CoN is indeed structurally deficient. The question is, how this can help with the non-minimal agreement pattern. We saw in the preceding section that the conclusion that the  $N_1$  lacks the  $\phi$ -projection is problematic. An alternative conclusion is that, due to its structural deficiency, the  $N_1$  must incorporate somewhere. The desired result that the  $N_1$  cannot intervene in the Agree relation between D and the  $N_2$  can now be achieved with two additional assumptions: (i) that the incorporation happens before D probes for  $\phi$ -features, and (ii) that incorporation makes elements invisible for later steps of the computation. Abstracting away from the rest, one possible way of representing the result is given in (44) (involving some rebracketing operation that applies in syntax proper such as m-merger in Matushansky 2006).

- (44)
- 
- ```

graph TD
  DP --> D
  DP --> XP
  D --- D_feats["[*φ*: a,b]"]
  XP --> N1plusdi["N1+di"]
  XP --> NP2
  N1plusdi --- N1plusdi_feats["[φ: m,sg]"]
  NP2 --- NP2_feats["[φ: a,b]"]
  
```

One problem this approach faces has to do with constituency again. Based on the coordination facts, prepositional *di* and the  $N_2$  must form a constituent to the exclusion of the  $N_1$ . This is not warranted in (44). I will, however, not exclude this analysis yet, as it seems to be able to account for a number of other properties.

For instance, the split in the modification data follows from the  $N_1$ 's phrase structural status: it can be modified by minimal but not by maximal categories. In addition, though the coordination test suggests otherwise, the movement data seem to support a structure of the kind in (44). (45a) is unacceptable as *wh*-extraction of the constituent [*di N<sub>2</sub>*] is only grammatical if *cazzo* is interpreted in its literal meaning. (45b) shows that the  $N_2$  cannot be extracted, regardless of whether *di* is pronounced or not. This can be taken to follow from the ban on P-stranding in Italian.

- (45) a. #[Di che insetto]<sub>i</sub> non ha mai visto [un cazzo *t<sub>i</sub>*]?  
of what insect not have.3SG never seen a dick  
b. \*[Che insetto]<sub>i</sub> non ha mai visto [un cazzo (di) *t<sub>i</sub>*]?  
what insect not have.3SG never seen a dick of

The same yields for clefts. Also, clitic substitution shows a similar result, cf. (46). The partitive clitic *ne* cannot substitute the constituent [*di N<sub>2</sub>*] in (46a) and the accusative clitic *la* cannot substitute the  $N_2$ , regardless again whether *di* is pronounced or not.

- (46) a. \**Ne<sub>i</sub>* ha mai vista una cazzo *t<sub>i</sub>* (... di farfalla)?  
PART.CL have.3SG ever seen a dick of butterfly  
b. \**L<sub>i</sub>'* ha mai vista una cazzo *t<sub>i</sub>* (di) (... farfalla)?  
ACC.CL have.3SG ever seen a dick of butterfly

The incorporation structure can explain the fact that, at the point where the derivation attempts to target the constituent [*di N<sub>2</sub>*], for movement or else, it no longer forms a constituent to the exclusion of the  $N_1$ . Assuming that moving the  $N_2$  alone is independently excluded by the ban on P-stranding, the only possible target for movement or substitution is the whole binominal. This is in fact attested. Example (47a) provides an example for topicalisation and example (47b) one for clitic right dislocation.

- (47) a. [Quella cazzo di macchina] non la guido di sicuro  
that dick of car not it drive.1SG certainly  
'As for that fucking car, I am certainly not going to drive it.'  
b. L' ho comprato *t<sub>i</sub>* per te [quel cazzo di troiaio]<sub>i</sub>!  
it have.1SG bought for you that dick of piece.of.junk  
'I bought it for you, that fucking piece of junk!'

Finally, an ulterior attenuation of the coordination facts is that nothing can intervene between the  $N_1$  and prepositional *di*. Some adjectives associated with the  $N_2$ , for instance, may occur in either the low position preceding the  $N_2$  or in a higher position above the  $N_1$ , but not between the  $N_1$  and *di*.

- (48) il mio {vecchio} cazzo {\*vecchio} di {vecchio} amico d' infanzia  
the my old dick old of old friend of childhood  
'My old childhood friend.'

Similarly, I believe that the only word in the binominal after which it is not possible to pause (unless it is repeated upon continuation) is the  $N_1$ . This is indicated by the starred #, which refers to a pause in (49). The impossibility of pausing in that position can be taken to indicate

phonological unity and parallels what can be observed with object clitics in front of auxiliary verbs, cf. (50).

- (49) una (#) cazzo (\*#) di (#) banana  
 a dick of banana  
 'A fucking banana.'
- (50) Oggi (#) t'/ti (\*#) ho (#) visto.  
 today you have.1SG seen  
 'I saw you today.'

Given that the movement facts follow rather smoothly, let us push this idea a bit further to see if the coordination facts can be derived, too. If one assumes that the incorporation is the result of Matushansky-style m-merger, as hinted at above, one may in fact derive them.<sup>17</sup> Consider the following derivation. First, one descriptive noun is generated. Then the prepositional *di* is merged. Now, these steps are repeated and the two constituents are merged together into a coordination structure. An example is given in (51).

- (51)
- 
- ```

  graph TD
    A[&P] --- B[XP]
    A --- C[&']
    B --- D[di]
    B --- E[NP2]
    C --- F[&]
    C --- G[XP]
    G --- H[di]
    G --- I[NP3]
  
```

The structure in example (51) is merged with the  $N_1$ . This yields the structure in (52).

- (52)
- 
- ```

  graph TD
    A[NP] --- B[N1]
    A --- C[&P]
    C --- D[XP]
    C --- E[&']
    D --- F[di]
    D --- G[NP2]
    E --- H[&]
    E --- I[XP]
    I --- J[di]
    I --- K[NP3]
  
```

At this point, given the structural deficiency of the  $N_1$ , m-merger must apply, yielding (53).

- (53)
- 
- ```

  graph TD
    A[&P] --- B[XP]
    A --- C[&']
    B --- D[N1+di]
    B --- E[NP2]
    C --- F[&]
    C --- G[XP]
    G --- H[di]
    G --- I[NP3]
  
```

<sup>17</sup>M-merger is chosen here as for the sake of concreteness. In principle, any operation which affects the structure before the determiner is merged is a viable alternative.

Given this derivation, both the incorporation of the  $N_1$  and the repetition of *di* are warranted. In order for the derivation to yield the desired result, both the timing of m-merger and the fact that it targets *di* rather than the coordinator are crucial. These are general problems that the m-merger based account of head-movement faces. These issues are addressed in Matushansky (2006).<sup>18</sup>

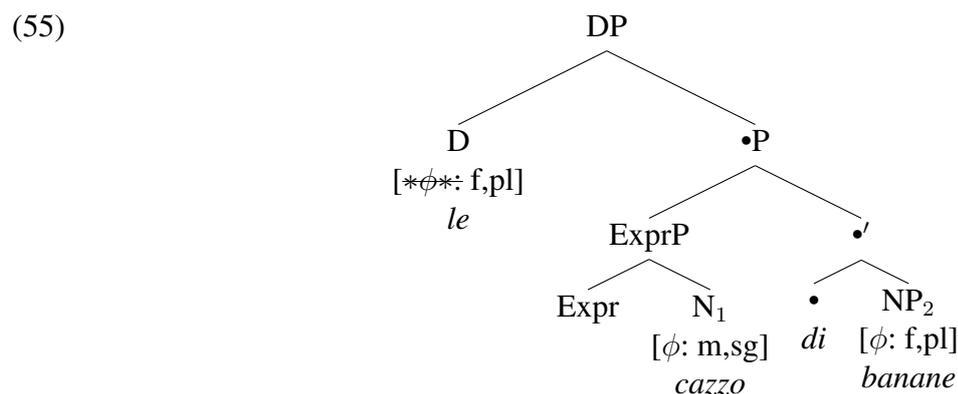
### 3.2.3. $N_1$ merges with functional category

Yet another possibility to derive the  $N_1$ 's invisibility is to assume the following: there is a functional category that merges with the expressive noun. The functional head will derive the right semantic type, i.e. it is a function from a category of a *descriptive* type to an *expressive* type. In a way this proposal would be a Schönfinkelisation of the expressive function proposed in Potts (2007). The descriptive noun and the expressive noun are merged as arguments of Pott's  $\bullet$ -function, the former as its complement, and the latter as its specifier. The original  $\bullet$ -function is defined as in (54) (Potts 2007:187).

(54) Where  $\alpha$  is of type  $\langle \sigma, \epsilon \rangle$  and  $\beta$  is of type  $\sigma$ , [and  $\sigma$  is a descriptive and  $\epsilon$  an expressive,]

$$[[\alpha]]^c \bullet [[\beta]]^c = [[\beta]]^{[[\alpha]]^c ([[ \beta ]]^c)^c}$$

Within this approach I propose to Schönfinkel (54) to yield a function which first takes an expression with descriptive content  $\alpha$  and then relates it to one with expressive content  $\beta$ , returning  $\alpha$  with altered context of interpretation. In addition, prepositional *di* will be the spell-out of the  $\bullet$ -function.<sup>19</sup> The functional head merging with the expressive noun to derive the correct semantic type, which I will call Expr, will warrant that the  $N_1$  may no longer intervene in the Agree relation between D and the  $N_2$ . This follows from the fact that the  $N_1$  will be too deeply embedded to c-command the  $N_2$ . Since closeness is defined in terms of (asymmetric) c-command, if the  $N_1$  does not c-command the  $N_2$ , it can no longer be closer to D than the  $N_2$ . This can be seen in the structure in (55).



<sup>18</sup>Matushansky does not discuss examples where m-merger applies to an externally merged element. She does discuss examples where m-merger applies to internally merged elements, clitics, so that my derivation is fully possible in her system.

<sup>19</sup>Prepositional elements such as English *of* or Italian *di* have been proposed to be the spell-out of various different functions, e.g. the head of a small clause (cf. den Dikken 2006), a partitive particle (cf. Barker 1997), a *residue operator* (cf. Zamparelli 1998), a  $\pi$ -operator (cf. Chierchia 1984).

An immediate advantage of this approach is that some seemingly category-free expressions such as *caspita* (section 3.2.1) can be used as the  $N_1$  even though they are no N. The modification facts are less trivial, but I propose that they can be derived in two ways: either the set of minimal modifiers has the right semantics to modify the constituent comprising the  $N_1$  and Expr, or the expressive noun must for some reason be structurally very small when it merges with the functional head Expr. The first option may have to do with the fact that, as pointed out to me by Rebecca Woods (p.c.), *stra-*, *mega-*, pejorative *-acci-* and the like have expressive semantics as well. The second option may follow from some principled reason of how the lexicon and syntax interact, which is to say from however derivational morphology differs from inflectional morphology. Though the details are unclear at this point, the second option may give an advantage in answering why D does not agree with the  $N_1$ . In fact, so far, the functional-head approach only derives the fact that the  $N_1$  does not intervene, not why Agree cannot target it. Considering that the idea that Expr has to merge with structurally small categories, that Expr can combine with elements such as *caspita* which are not nouns, and that the resulting category is not nominal, I conclude that changing category will make the  $\phi$ -features inaccessible for the syntax. This is to say that, though Expr may be merging with a root that, as part of its lexical information contains some inherent  $\phi$ -features, once the syntactic object is not a noun anymore, the initial inherent  $\phi$ -features become obsolete for syntactic computation so they are not represented. To convince you of this, consider the following. All Italian nouns have inherent  $\phi$ -features. Many of these nouns can be turned into verbs. The infinitive form of the verbs can in turn be used as nouns. As a concrete example, take the feminine singular noun *chitarra* ‘guitar’. We can make the verb *schitarrare* ‘play around on a guitar’ from it with the productive *s-* prefix. We can now use this form as a noun again, *lo schitarrare* ‘the act of playing around on a guitar’. This form, as any infinitive verb form used as a noun, is masculine, not feminine. Were all of these derivations available information for the syntactic computation, I would find it surprising that the final result does not make use of the initial  $\phi$ -feature information to preserve the inherent feminine gender of *chitarra*. This is surely a very old point, a re-evocation of the split between derivational and inflectional morphology alluded to above. Based on these considerations, I would like to contend that the very presence of Expr is the solution. When Expr combines with a noun, the noun’s inherent features become irrelevant and inaccessible for further syntactic computation but crucially present on the noun itself and readable by the morpho-phonological component.

Finally, it must be asked what the predictions of this approach are, especially given the number of required stipulations. If functional projections are part of the vocabulary of Universal Grammar, introducing a new functional projection predicts that these should be present in (at least a subset) of the other languages of the world. Also, for this approach to be principled and testable in any way, the requirement on the timing of merger of Expr had better be general. All languages which have Expr as part of their vocabulary and make use of it should therefore instantiate the same quirky agreement pattern or similar syntactic effects. This may be correct for German. Consider (56).<sup>20</sup> The determiner agrees with the second noun rather than with the first, strongly resembling to the CoN on the surface.

<sup>20</sup>*Scheiß* is the masculine counter-part of feminine *Scheiße* (as in *Was soll der/die Scheiß/Scheiße?* ‘what should the.M.SG/the.F.SG shit/shit?’). Also, (56) is not a simple compound as the stress rule for compounds which would assign the main stress to only one of the two nouns (and in particular to *Scheiß*) does not apply. Both nouns have their own main stress.

- (56) a. Ein-e Scheiß Banane  
 a-F.SG shit.M.SG banana.F.SG  
 ‘A damn banana.’

Unfortunately, testing this claim goes beyond the purpose and reach of this paper. I will limit myself to pointing out that not only expressive nouns seem to exhibit this peculiar non-minimal agreement pattern. In fact, in Hausa (Afro-Asiatic), the noun *ìree* which denotes ‘kind’ cannot be agreed with when used as the N<sub>1</sub> of a binominal. This is shown in (57).<sup>21</sup>

- (57) a. Wà-cè irì-n mootàa?  
 which-F kind.M-LNK.M car.F  
 ‘Which kind of car?’  
 b. \*Wà-nè irì-n mootàa?  
 which-M kind.M-LNK.M car.F  
 ‘Which kind of car?’  
 c. Wà-d’annè irì-n kàrnai?  
 which-PL kind.M-LNK.M dog.M.PL  
 ‘Which kind of dogs?’

The same is reported for *kind* in certain English dialects (cf. Zamparelli 1998; Carlson 1977). Holding the functional projection Expr responsible for the non-minimal agreement pattern, the possibility of a unifying account which comprises examples (56) and (57) is lost.

#### 4. Evaluation

This section aims to summarise what I deem to be the core properties of the CoN. These are (i) the agreement facts, (ii) the N<sub>1</sub>’s invariance in number, (iii) the modification facts, (iv) the coordination facts, (v) the movement facts, and (vi) the semantics.

##### i Agreement

In the CoN, any element c-commanding the binominal obligatorily agrees in  $\phi$ -features with the structurally more distant noun. Thus, given a M.SG N<sub>1</sub> and a F.PL N<sub>2</sub>, in a constituency [N<sub>1</sub> [of N<sub>2</sub>]], determiners and verbs can only exhibit F.PL agreement.

##### ii Number invariance

The N<sub>1</sub>’s value for number remains invariant in the CoN, regardless of whether it is a singular or a plural noun (e.g. *cazz-o* ‘-M.SG’ vs. *accident-i* ‘-M.PL’, (5b)).

##### iii Modification

The N<sub>1</sub> of the CoN cannot be modified by phrasal/regular adjectives, while it can be modified by derivational morphology such as the pejorative, or elements which seem to incorporate or adjoin such as *stra-* ‘extra’.

<sup>21</sup>The diacritic ` stands for low tone, while no diacritic for high tone; *d*’ is an implosive. The data were collected through consultation with Ari Awagana, who is a native speaker and lecturer in the African Studies Department at the University of Leipzig.

	structural deficiency	functional category
agreement	✓	✓
number invariance	–	?
modification	✓	✓
coordination	✓?	✓
movement	✓	?
semantics	–	✓

Table 2: Evaluation and comparison of the two competing proposals

iv *Coordination*

Generally, when the  $N_2$  of the CoN is coordinated, the prepositional element *di* must be repeated.

v *Movement*

In the CoN only the full binominal can be extracted, i.e. the  $N_2$  alone, the  $N_1$  alone, or [*di*  $N_2$ ] cannot be extracted. The same holds for clefting and substitution by clitics.

vi *Semantics*

Only elements that satisfy all the properties of an expressive as discussed in section 2.1 can function as the  $N_1$  of the CoN.

Table 2 summarises how well the structural deficiency and the functional category approaches fare with respect to deriving these properties. A check mark (✓) indicates that the facts follow from the core assumptions of the approach, a question mark (?) that it is unclear, a dash (–) that it does not follow from what was proposed.

Overall, it seems that the functional category approach fares better, though it may be argued that it requires two very specific and potentially construction-specific assumptions, namely the •-function in the syntax the way it was proposed in this paper, and the functional category Expr.

## 5. Conclusions

In this paper, a novel binominal construction from Italian was introduced, termed the *Cazzo-of-N* construction (CoN). The structural properties of this construction were discussed, focussing on the construction's agreement pattern. In particular, the agreement pattern is argued to present a challenge for a view of grammar rooted in the Minimalist Programme, where all feature co-variation should be derived by the operation Agree. The operation Agree is subject to Minimality, a locality restriction that prohibits establishing a dependency with an element if there is a structurally closer element of the same type. The CoN, however, seems to exhibit exactly such a pattern. An example is repeated in (58) (=4).

- (58) Dell-e cazz-o di banan-e.  
 PART-F.PL dick-M.SG of banana-F.PL  
 'Some fucking bananas.'

Given that evidence from coordination supports the fact that *cazzo* in (58) is structurally higher than *banane*, it is problematic that the determiner agrees with the noun that is further away, i.e. violating Minimality. In the attempt to attenuate these initial findings and to uphold Minimality as an inviolable principle of natural grammar, other properties of the construction were scrutinised. In conclusion, the  $N_1$  of the CoN appears to be structurally smaller than a fully fledged noun. Various potential analyses were proposed, of which two were discussed in greater detail. The first proposed that the  $N_1$  incorporates into the neighbouring prepositional element *di* and that because of this it can no longer be targeted by Agree. The second proposed that the two arguments of the CoN are introduced by an expressive small clause via a schönfinked version of the  $\bullet$ -function proposed in Potts (2007). The  $\bullet$ -function takes the descriptive noun  $N_2$  as its complement, relating it to the expressive  $N_1$  that is in its specifier, and returning the  $N_2$  with altered context of interpretation. In order for the  $N_1$  to be of the right type, namely an expressive type following Potts, the  $N_1$  was proposed to combine with a new category, Expr. It was finally proposed that this category combines with small objects, heads or roots, and that this being a process more akin to derivational morphology, it rendered the  $N_1$ 's inherent  $\phi$ -features inaccessible to further syntactic computation. This final assumption in particular derives the non-minimal agreement pattern of the CoN without violating Minimality. Overall, it was decided that, although perhaps more construction-specific assumptions were required, the account relying on the category Expr was more successful in deriving the core properties of the CoN: the non-minimal agreement pattern, the number invariance of the  $N_1$ , the availability of non-phrasal but unavailability of phrasal modification, the coordination facts, i.e. the constituency of [*di N<sub>2</sub>*] to the exclusion of  $N_1$ , the impossibility to extract the  $N_2$ , and, finally, the expressive semantic nature and contribution of the  $N_1$ .

#### Abbreviations

1 'first person', 2 'second person', 3 'third person', ACC 'accusative', CL 'clitic', DAT 'dative', F 'feminine', LNK 'linker', M 'masculine', PART 'partitive', PEJ 'pejorative', PL 'plural', SG 'singular', STRONG 'strong pronoun', SUP 'superlative', WEAK 'weak pronoun'.

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# Gendered discourses in Kuria Female Circumcision Songs

Joyce Wambura

Gender inequality is a global issue, with efforts to realise equality being hindered by sociocultural factors in different societies. Based on critical discourse analysis this paper focuses on Kuria female genital mutilation (FGM) songs to investigate how gendered discourses are articulated and social actors represented. The songs were collected during the 2014/2015 female circumcision ceremonies in Kuria, Kenya. Initial findings reveal that male dominance and female subordination is the norm; the linguistic choices made disseminate stereotypical gender ideologies while maintaining the status quo. The goal of this paper is to raise awareness of how gender asymmetries and power relations are perpetuated through discourse.

## *1. Introduction*

Gender inequality is a global issue affecting women and girls in different parts of the world; efforts to realise equality between men and women are being hindered by sociocultural factors and traditional beliefs about gender roles and behavioural expectations in different societies. In this paper, I analyse female circumcision songs to investigate how particular gender discourses are articulated and whether they sustain or challenge Kuria<sup>1</sup> beliefs on gender relations, roles and expectations. I use critical discourse analysis (Sunderland 2004; Lazar 2005; Fairclough 2015) to analyse the songs as cultural and linguistic practices, focusing particularly on how social actors are represented (van Leeuwen 1996). I identify traditional gendered discourses in the songs and examine how Kuria men and women are constructed and how their representation perpetuates gender imbalances and asymmetrical power relations. In this case, gendered discourses are conceptualised as ‘discourses that say something about women and men, girls and boys, and about their – in certain ways gendered – actions, behaviours, positions, choices, relations and identities’ (Litosseliti 2006:58). More specifically, gendered discourses are discourses that represent women and men acting (or

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<sup>1</sup> The Kuria people, also called Abakuria, are a Bantu language group who live in both Kenyan and Tanzanian territories (see details in section 4).

being expected to) in certain ways because they are women/men or girls/boys. In most instances these representations reconstitute and maintain (or challenge) gender inequalities.

Gender and language studies have been of interest in linguistic research with scholars focusing on inequality, power, ideology, discrimination and subordination in different contexts (Majstorovic & Lassen 2011; Atanga et al. 2012). Most of these studies have focused on Western societies and cultures, particularly Europe and America. The African context is still underexplored; there are even fewer studies in Kenya and none in relation to Kuria. This paper will therefore constitute an addition to the existing literature in gender and language scholarship while suggesting alternative ways of achieving gender equality. The main objective is to analyse traditional views and perceptions of gender, as manifested in FGM ceremonies, and explore the interrelationship between discourse, gender and sociocultural practices.

Earlier language and gender researchers (first and second wave feminists) were associated with gender differences, political resistance against sex discrimination, promotion of gender equality and emancipation of women (see Lakoff 1975; Tannen 1990; Litosseliti 2006). Current researchers (third wave feminists) have adopted more critical, constructivist and poststructuralist theoretical perspectives while focusing on diversity, performativity and co-construction of gender identities and inequalities (and ways of changing these) in the society (Litosseliti 2006). Talbot (2010) states that gender and language research is now predominantly interested in identifying, demystifying and resisting the ways language is used to reflect, create and sustain gender inequalities in specific contexts. This paper is embedded in the current trends in gender and language research whose focus has shifted from identifying differences in language use between men and women to examining how language use constructs, represents and produces gender identities and relations, and how gender relates to other social aspects such as ethnicity, age, class, race and status. It claims that language shapes and is shaped by social structures; language therefore contributes to reproducing and/or changing these structures.

## *2. Background*

Language and culture are intertwined. Linguistic practices are social practices, while social practices are partly linguistic (Fairclough 2015). Studies in language and gender have demonstrated that language is a critical vehicle in issues of gender and in power struggles (Baxter 2003; Sunderland 2004; Cameron 2005). Gender roles, behaviours and expectations are expressed through linguistic sites such as proverbs, idioms, and songs. These act as sites where the relationship between language, gender and culture can be explored and sociocultural roles and gender expectations be understood. In Kuria, men (of all ages) are perceived to be authority figures who hold power and control. This is a common feature in most patriarchal societies (see Connell 1995; Diabah & Amfo 2015) and it is in most cases seen as legitimate and largely inherent; it is common sense and part of life (of the Kuria people for instance). Deeply entrenched in patriarchal societies is hegemonic masculinity and femininity. Connell (1995) defines hegemonic masculinity as the configuration of gender practice which embodies legitimacy of the dominant position of men and the subordination of women. Schippers (2007:94) states that hegemonic masculinity entails 'the qualities defined as manly that establish and legitimate a hierarchical and complementary relationship to femininity and that by doing so guarantee the dominant position of men and subordination of women'. Hegemonic femininity on the other hand entails 'characteristics defined as womanly

which establish and legitimate a hierarchical and complementary relationship to hegemonic masculinity and that by doing so guarantee the dominant position of men and subordination of women' (Schippers *ibid*). Hegemonic femininity works in such a way that it allows compliance with and subordination through accommodating the interests and desires of men. Both work through consensus.

Whereas there is substantial amounts of work on African sociolinguistics, Atanga et al. (2012) observe that there is a lack of African sociolinguistic work in relation to gender. Some of the gender and language researchers in the African continent have focused on proverbs (Hussein 2005; Muwati et al. 2011; Anderson 2012) arguing that this is the main medium for the expression of gendered norms and practices. Findings from their research show that African proverbs are more positive when referring to men while women are represented negatively or in subordinate positions (see also Wambura 2012). Other examples of research that has focused on gender and discourse in the African context include Atanga (2012), on gendered discourses in Cameroon parliament and Ellece (2011) on gendered marriage practices in Botswana. Both Atanga and Ellece found that men and women were constructed in binary and unequal ways; men were positioned as public and active while women were represented as domestic, only being active within a restricted home environment.

Gendered constructions in sociocultural contexts support masculine superiority and feminine subordination. For instance, whereas men are depicted as active outside the home environment and owning properties of great value, women are portrayed as active indoors, concentrating on beauty and adornment and owning properties of less value. These unequal representations will be explored in this paper and the implication for gender relations and structures examined. Through female circumcision songs in Kuria, the image of a Kuria man and woman is reinforced and their socially assigned roles and expectations constructed and maintained. Through a critical discourse analysis (hereafter CDA), the use of songs as a tool through which men and women's social and economic position is legitimated and women's participation restricted to private spheres is explored. The consequence of gendered representations in sociocultural sites is that normalisation of inequality is reproduced, legitimated, celebrated and advanced. In turn, women are pushed to restricted environments where they have to depend on men for provision and protection and this limits their power both at home and in society.

Studies on songs in Kenya are uncommon, with none of these focusing on female genital mutilation (henceforth FGM) songs. Ntarangwi (2001), for instance, studied popular music performance among the Swahili of Mombasa. His findings reveal that Swahili musical practices engender both competitive and complementary realities rather than occupying two distinct worlds of men and women as had been thought before. My focus is on how language is employed in the construction of gender and how gender ideologies are perpetuated through discourse. In the following sections, I present a brief description of the Kuria female genital mutilation ceremonies in which the songs are produced after which I briefly highlight the theoretical framework and methods of data analysis. This is then followed by a presentation of the data and analysis. The last section is a detailed discussion of gendered discourses that construct men and women in different ways and the conclusion.

### *3. Female Genital Mutilation*

The World Health Organisation (WHO) has defined FGM as partial or total removal of the female genitalia or other injury to the female genitals for cultural or other non-medical

reasons (WHO 1997; Momoah 2005). WHO further describes female genital mutilation as a violation of human rights and the rights of girls and women (WHO 2008) and calls upon communities and cultures that practise FGM to end it. Despite the efforts by WHO, communities practising FGM still hold firm to the practice, with each community giving myriad reasons for the continual promotion of the practice. Most of the communities that practise FGM view WHO's approach as a top-down or Western view.

The term female genital mutilation was coined by WHO and is used by those who are against the practice and the cutting of any part of the female genital organ. The council on scientific affairs of the American Medical Association (1995) defines FGM as an unnecessary modification of female genitals. FGM as a term is now recognised worldwide. However, among most communities where cutting some parts of female genital organs is considered to be a cultural practice, the term used is female circumcision (Onuforo, Oyedele & Pacquiao 2004). Female circumcision is considered a rite of passage from childhood to adulthood in most of these societies. The anti-FGM advocacy literature has variously defined the ritual using different expressions such as 'Female Genital Castration', 'Female Genital Surgery' and 'Female Cutting'. Those in support of the practice argue that these expressions are suggestive of an ideological dichotomy of Western versus non-Western or superior versus inferior. The term 'FGM', for example, presents the initiates as having been mutilated, which to those involved is seen as an insult. On the other hand, expressions such as female genital castration, conjure images of infertility, especially among communities such as Kuria which argue that the practice prepares women for marriage and motherhood. Practitioners argue that it is their right to practise their culture and accuse the critics of neo-colonial attitudes. To date, the two terms 'female genital mutilation' and 'female circumcision' have been used interchangeably. As mentioned above, I will therefore use both FGM and female circumcision in this paper. Other terms that are important in this paper include the Kuria terms for the girls going through circumcision *abasagane* 'uncircumcised girls', those who have just been circumcised *abasamba* 'the initiates' and those who have graduated *abaiseke* 'women'. The surgeon is *omokebi/omosari* 'circumciser' while the woman supporting the girl is *omogoti motwe* 'literally the holder of the head'. When being prepared for circumcision and undergoing healing they sing circumcision songs (*okorea obosamba*) and on the last day of the healing process there is a large coming out ceremony (*okoorka*). The actual act of circumcision is *ogosarwa* 'to be cut'.

World-wide, female genital mutilation practices range from the washing of the clitoris for the purpose of cleansing it, light pricking of the clitoris, cutting the small tip of the hood of the clitoris, to cutting of the main parts of the female genitalia and sewing the opening, leaving a small opening for passing urine and menstrual blood. WHO (2008) has classified the surgeries into four main types. Type I: partial or total removal of the clitoris and the prepuce (clitoridectomy); Type II: partial or total removal of the clitoris and labia minora, with or without excision of the labia majora (excision); Type III: narrowing of the vaginal orifice and creation of the covering seal by cutting and appositioning the labia minora and/or labia majora with or without excision of the clitoris (infibulation); Type IV: all other harmful procedures to the female genitalia for non-medical purposes for example pricking, piercing, incising, scraping, and cauterisation. Among the Kuria it is Type II (partial or total removal of the clitoris and labia minora) which is practised. The side effects vary depending on the level of the operation. The effects can be short-term or long-term. At the time of the operation, the greatest risks are hemorrhage and shock (Shell-Duncan & Hernlund 2001); these claim an unknown number of victims with most of those who succumb to death going unreported (PATH 1997). Those who survive can suffer from acute or chronic disorders, including

clitoral cysts, labia adhesions, recurrent urinary tract infections, renal scarring and kidney dysfunction, sterility and, as intended, the long-lasting loss of sexual feeling. Women are left with scars, numbness and a loss of sensation in their sexual organs as well as with an abiding sense of shame and embarrassment (Gollaher 2000).

The distribution and prevalence of FGM varies with continents. Approximately 132-140 million women have experienced FGM worldwide (Shell-Duncan & Hernlund 2001; Momoah 2005; Wilson 2013; Reid 2014). In the UK, 130,000 girls and women live with the consequences of FGM while 60,000 are at risk of the most severe forms of FGM (Beckford & Manning 2016). FGM is also practised in Europe, America and Australia mostly among immigrant communities, refugees and asylum seekers (Government Equalities Office 2015). In Africa, FGM takes place on 28 countries with the prevalence ranging between 12% and 100%; seventeen of these countries have rates over 50% (Momoh 2005).

#### *4. The Kuria context*

Kuria is a Bantu language group of people who live in Kenya and Tanzania. There are approximately 300,000 Kuria speakers in Kenya with three times this number living in Tanzania (Kenya population census 2009). The Kenyan and Tanzanian Kuria speakers share the same language, beliefs and sociocultural practices. Kuria, like most Kenyan communities, is a patriarchal society with all the power and decision making lying with the men while women take a subordinate position (see Onyango 2008). In such communities gender differentiation discourses are intrinsic. Women and men participate in segregated homosocial practices. Stereotypes regarding gendered division of labour and gender differential social practices are also prevalent. Such stereotypes are manifested in linguistic traces of the discourses of these societies. African feminism seeks to subvert and challenge patriarchal practices such as female circumcision, which is illegal in Kenya but which persists in Kuria despite the legislation. By being the only way to get married, FGM practice is presented as a pre-requisite for women to gain status and position in society, and a requirement for them to perform their socially ascribed duties as Kuria women. The Kuria FGM songs are valued and taken to be positive. Messages in them, that depict for instance women in domestic roles, have been accepted and even celebrated in the Kuria society; they are advanced through social consensus.

#### *5. Kuria female circumcision ceremonies*

Female circumcision is an old practice among the Kuria people that dates to many years before the precolonial period (Rioba 2014). Most of the older people in Kuria society state that circumcision and the accompanying rituals and ceremonies have been there since their great grandfathers. According to Kuria sociocultural practices, every stage of life is accompanied by celebrations and the performing of songs. For instance birth, naming, circumcision, wedding and burial ceremonies have specific songs that accompany them. These songs are not only used for entertainment but are also custodial of the Kuria people's way of life. They narrate the history of the people and outline the societal values, beliefs, expectations, gender roles and gender relations. It is this latter role that this paper addresses. Among the Kuria, female circumcision is a mandatory exercise through which transition from childhood to adulthood occurs. Rioba (2014) states that, through female circumcision Kuria

girls are transformed into women so that they can be married. This is because a Kuria woman who is not circumcised is ‘unmarriageable’<sup>2</sup> and thus a threat to the continuation of the family line and existence of the community, the two aspects that are of paramount importance in this patriarchal society. As stated earlier, power in the Kuria society lies with the men. They own property (including women and their children), they are the heads of households and they make all the decisions. This is the case in many African cultures whereby before circumcision a girl is under the rule and control of her father, but once circumcised and married, this rule would immediately shift to her husband (Alemu 2009). Female circumcision is therefore viewed as the only way through which women are elevated towards the level of men, who are the dominant group, and the only way for some women (those circumcised) to attain power over other women (the uncircumcised).

Circumcision ceremonies are decided upon by a group of men called *inchama* ‘the council of elders’. This council declares a circumcision season months or even years before it is conducted. They judge a number of physical and metaphysical factors before declaring a circumcision season open. After that, girls (aged between 9 and 14 years) are prepared for the ceremonies by undergoing several prescribed rituals, which culminate in genital cutting. Among the *Abairege* and *Abanyabasi* clans, where my research was based, circumcision occurs every two years unless the elders decide otherwise, that is when the gap is extended to three years. Preparation for the ceremonies begins at the family level months before the day of the cut. The family prepares *obose bo amarebo* ‘cassava flour’ and *ichinkwe* ‘firewood’. They smear the houses (*okohoma*) with clay and the mothers prepare *ememera* ‘finger millet yeast flour’, which is used to make *obosara* ‘a sour drink’ the day before. On the eve of a girl’s circumcision day, her mother and female relatives gather at her home to sing songs (*okorea obosamba*) and encourage her to brave the cut and not to shame the family by showing fear or crying. They spend the entire night singing and at dawn set off for the circumcision grounds set by the council of elders.

Early in the morning the noise of circumcision parties can be heard as they walk their candidate to the site trying to be early in line. Most girls set off from home by seven to eight o’clock. The girl is normally wearing *egemu* ‘a special dress’ with a hat and a *leso* ‘coloured piece of cloth’, and is escorted by relatives and neighbours, who taunt her against embarrassing them and warn her against crying. This happens amidst singing all the way to the place set for the cut. Once there the girls line up and behind each there is a woman who acts as a personal supporter (*omogoti motwe*), normally an aunt or cousin. This is the one who holds the girl tight and ensures she does not escape when she gets scared. The circumciser then approaches with her tools and cuts the clitoris of each girl moving along the line and giving each one time to wait for at most five minutes before standing up. The cutting ceremony takes between five and six minutes depending on how cooperative the girl is. The girls stand up in unison and have their *lesos* (piece of cloth) tied around their necks by the escorts, they line up in the order in which they were cut and set off for home. Once cut there is a group of noisy relatives and friends waiting to escort them home. They are heavily dressed in banana leaves, herbs and shrubs and when they move they can be mistaken for small bushes walking. The men strongly beat *pangas* (machetes) against shields and shout praise for the girls while the women ululate and blow whistles as they dance and sing all the way home. The women sprinkle powder on the faces of the circumcised women (*abasamba*); the powder’s whiteness serves to mask their facial expressions because at this time some girls

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<sup>2</sup> Kuria men do not propose marriage to uncircumcised women. If a Kuria woman refuses to be circumcised, she can only be married outside the Kuria community – in most cases such women marry into the neighbouring Luo community, which does not circumcise at all.

shed tears due to pain caused by walking and blood clotting at the wound and the pain of the cut. The men smear their faces with red ochre and adorn wild animal skins and birds' feathers. Some wear Maasai headgear, others red clay encased braids, some wear scary masks and often scare anyone on the way claiming to ward off evil spirits that may harm their, now, women. Musicians play instruments such as the *ekegogo*, *iritingo* and *ibirandi* as they walk home. The group keeps growing and others join in with the aim of eating and drinking once they get home. The group repeatedly stops for newcomers to join, pin money on the girls' hats and praise them, and as the crowd increases so does the jubilation and exuberance of the escorts.

Once they reach the gate of the girl's home, blood is sprinkled to ward off evil spirits and the girl is asked to walk over it and get in the house. She goes to a specially prepared room and lies on a mattress or animal hide placed on the floor. She is served with the *obosara* 'sour drink', later *ubukima* 'ugali/ a paste made from cassava flour', and *inyama* 'meat'. Then the celebration continues into the night. The girl is now considered to be a proper woman ready for marriage once she heals. Healing takes between two weeks and one month. During this time she is taught how to be a submissive wife and about her socially ascribed roles, expectations and behaviour as a Kuria woman. Some of these roles include cooking for her husband, giving birth to and caring for the children, opening and closing the cowshed's gate and respecting all members of her husband's family. She is not expected to do any of this if she has not undergone FGM. After graduation she is married off as soon as possible.

One key characteristic of these ceremonies is the FGM songs. These songs, and their accompanying ceremonial rituals, provide sites where gender discourses circulate and through which asymmetrical power relations are perpetuated every season. This calls for a need to research and uncover ideologies in the songs as the initial step towards challenging normalised gender inequalities and power asymmetries that are discursively reproduced and legitimised, with the ultimate goal being to create awareness, encourage resistance and contribute towards social change.

## 6. Critical Discourse Analysis

This paper uses Critical Discourse Analysis (CDA) as its theoretical and methodological framework. It also makes use of Sunderland's (2004) work on gendered discourses and views representation of men, women and FGM as inherently gendered. Van Dijk (2001:352) defines CDA as a 'discourse analytical perspective that primarily studies the way social power abuse, dominance and inequality are enacted, reproduced and resisted by text and talk in the social and political context.' CDA has an explicit interest in making transparent the hidden agenda of discourse which is responsible for creating and sustaining gender inequalities. Wodak (2002:11) argues that CDA does not only focus on analysing opaque relationships 'but also transparent structural relationships of dominance, discrimination, power and control as manifested in language'. It is therefore the most appropriate research tool to critique social inequalities as reflected in language. The starting point of CDA is social problems (Fairclough 2001) *such as gender inequalities* with the ultimate goal being emancipation and social change (Lazar 2005 my emphasis). Society is submerged in many social problems including dominance and abuse. These are enacted and reproduced in discourse in ways that are not always obvious (Fairclough 1992; van Dijk 2001). Lazar (2007) argues that issues of gender, power, and ideology have become increasingly more complex and subtle in present times; hence calling for an analytical approach that is both descriptive

and critical. CDA is such an approach. CDA has been used to study gender issues (see for instance Lazar 2000; Sunderland 2000, 2006; Kosetzi, 2008; Atanga, 2012; Ellece, 2012) and has been described as an incisive tool for the study of gender. I particularly make use of Fairclough's (1992, 2015) framework of analysis as it is concerned with textual analysis, including vocabulary and metaphor analysis. I analyse songs as texts whose intense and concise nature hides some of the intended meanings, thus making ideological underpinnings more subtle and pervasive. They also serve to sustain hierarchical gendered social arrangements in which women are disadvantaged and men exalted.

CDA enables the identification and critique of 'discourses which sustain a patriarchal social order: that is, relations of power that systematically privilege men as a social group and disadvantage, exclude and disempower women as a social group' (Lazar 2005:5). I will be analysing lexical items and metaphors as linguistic practices. A metaphor is described as a linguistic item in which one thing is compared to another. Lakoff & Johnson (1980) argue that metaphors are central to human thought. Most researchers have studied metaphors using the cognitive metaphor analysis approach (Lakoff & Johnson 1980; Kovecses 2002) but this method has been criticised based on the argument that metaphorical expressions in language may have nothing to do with thought, but rather are a matter of lexical semantics which can be historically explained (see Glucksberg 2001; McGlone 2007). In identifying metaphors I borrow elements of the metaphorical identification procedure (MIP) developed by the Pragglejaz Group (2007) and combine this with CDA. In MIP the two semantic domains involved in the expression are bridged by some form of semantic transfer from one sense to the other on the basis of similarity and comparison (Cameron 2003; Steen et al. 2010).

This 'transfer of meaning in context' (Cameron & Maslen 2010:102) is from the source domain to the target domain (for instance from earring to circumcised woman) and it helps a listener understand one domain in terms of another. In critical metaphor analysis (see Charteris-Black 2005) a linguistic item in which one thing is compared to another is critically examined. Although CDA has been used to study gender issues in texts through close examination of linguistic features, research on metaphor using CDA has received little attention, yet metaphor is central to critical discourse analysis due to its role in forming what is taken to be a coherent view of reality, but which may constitute hidden subtleties. A critical discourse analysis is therefore important because metaphors perform ideological work by privileging one understanding of reality over others. They also contribute to or constitute an ideologically vested discourse (Koller 2007) and produce distinct representations of the world (Fairclough 2003).

### *7. Data and analytical methods*

The data for this paper constitute songs which were collected during female circumcision ceremonies in Kuria, Kenya between November 2014 and January 2015. I participated in the ceremonies as an insider and observer where I audio-recorded female circumcision songs, conducted interviews and kept observation notes. Thirty songs were recorded as they were being performed during the ceremonies and 20 interviews with 16 women and 4 men conducted; observation notes detailed non-linguistic aspects which were relevant to the study. Data were transcribed and translated from Kuria language to English, then analysed and interpreted. Translations were verified by two other Kuria speakers who are also proficient speakers of English. For this paper only six songs, which have been purposefully selected to address the questions, are analysed. Analysis involved identifying lexical items and

metaphors in the songs and categorising them into two groups, those that referred to men, and those for the circumcised and the uncircumcised women. This was based on the analyst's linguistic competence as a first language speaker of Kuria and the understanding of the metaphors. I identified where patterns were being created and noted which metaphorical meanings were being used for men and for women, then drew conclusions. Following Sunderland's (2004) approach, gendered discourses were identified, named, described and interpreted as they emerged in the songs, while drawing meanings from the context where the songs are produced and consumed. The procedure involved identifying gendered discourses and the traces which realised each of them and shuffling between the discourses and the relevant linguistic features until there were no more discourses. The next section is a summary of the linguistic features that acted as evidence of gendered discourses in the data.

### 7.1 Traces of gendered discourses in the songs

Sunderland (2004:28) states that the process of discourse identification is always interpretive, because there are no finite sets of discourses. She adds that discourses are not always there to be recognised easily; they 'are not simply out there waiting to be spotted' but are 'in flux' (see also Litosseliti 2006). There is, therefore, no discourse that *self-evidences* itself as a discrete chunk of a given text in its entirety, 'what is there are linguistic features: 'marks on the page', words spoken or even people's memories of previous conversations [...] which - if sufficient and coherent may suggest that they are 'traces' of a particular discourse' (Baker 2008:95). For this paper, the lexical items and metaphors identified in the data are the linguistic cues/traces of gendered discourses in the songs and some of the ways in which men and women are constructed. Table 1 summarises some of the lexical items used in the songs. Selection is done purposively and based on the frequency of use. Table 2 summarises the identified metaphors (source domains), their frequencies and the gender category (target domains) they refer to. In section 8, I discuss the gender discourses constructed through the use of these linguistics items in greater detail.

<b>Men</b>	<b>Circumcised women</b>
<b>Attributive nouns</b>	<b>Attributive nouns</b>
Shield (5)	Rock (17)
Slaughterer (4)	Server (4)
Thunder (3)	Water fetcher (4)
Mushroom (2)	Soda (3)
Iron rod (2)	Healer (3)

	Sola (2) Ship (2) Bomb (2) Tree (2) Chicken (2)
	<b>Descriptive nouns:</b> Her beauty lies in her: Teeth (5) Necklaces (3) Beads (3) Beautiful hair (2) Belts (2) Earrings (2)
<b>Material process:</b> Brings (8) Runs (7) Reaches (5 ) Goes (4) Splits (3) Rules (3) Kills (2) Protects (4 ) Gets (3)	<b>Material process</b> Spread (7) Serve (5) Closes the gate (4) Opens the gate (4) Give birth (3) Adorn (2) Entice (2)

Table 1: Selected lexical items in the circumcision songs and their frequencies

<b>Gender</b>	<b>Man</b>	<b>Woman</b>
<b>Metaphors</b>	Shield (5) Thunder (4) Mushroom (2) Iron rod (2)	<b>Circumcised woman</b> Rock (17) Soda/solar <sup>3</sup> (3) Earrings (2) Tree/chicken (2)

<sup>3</sup> The word 'soda' used in the songs refers to the soft drink produced and distributed by the Coca Cola company , while 'solar' refers to the solar panels used to tap sunlight energy.

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Table 2: Selected metaphors in the female circumcision songs, their frequencies and the gender they refer to

From Table 1, actions that have to do with strength, relations of material objects of value and daunting activities are associated with men while women are assigned processes and actions that have to do with cooking, serving, beauty and adornment. Women also take the caring, reconciling and bearing adjectives. This representation is pre-eminently unequal and contrastive. It reveals the patriarchal status of the Kuria society. The woman is being presented as a weak object whose only strength lays in performing her domestic duties and in her beauty both natural (teeth) and artificial (ornaments); both of which are meant for men's admiration. On the other hand, men are presented as powerful leaders, fighters, and protectors and in some instances dangerous and destructive. Women are never constructed as active except in domestic spheres while men are actively involved in physical action: running, splitting trees with their bare hands and so on. This involvement in material processes has been described by Halliday (1985) as a way of representing those who wield power and those who do not. Showing men as being involved in material processes leads one to infer that men are practical and have courage and the potential to act while women do not. The wordings of the songs therefore reflect the unequal social status of Kuria men and women.

This analysis is similar to what Talbot (1995) found while analysing two novels. Though Talbot did not use processes, she found that the hero (a man) was attributed transitive verbs (meaning he was more active) while the women characters were attributed intransitive verbs (were less active). Women were frequently being acted upon or were simply reacting to men's actions. The men's actions were represented in verbs such as *reach*, *grab*, *shield* and *take*; conversely, the actions of female characters took intransitive verbs like *stand*, *lean back* and *watch* (Talbot 1995). In the circumcision songs, men take verbs such as *split*, *rip*, *run*, *shoot* while women's actions include *cook*, *serve*, *laugh* and *adorn*. Song 14 below illustrates some of the unequal representations evident in the FGM songs which show men being portrayed as more active and agents while women are recipients.

#### Extract 1 (Song 14)

*Father is a man  
 He is enough to **go** to England  
 To **rule** the community of the mighty  
 When he wants to **come** back he won't hide  
 He will **come** with a big car that will be **speeding**  
 .....  
 Mother what I can relate you to  
 What I have **brought** you is beautiful hair*

*So you can give to Esther and Deborah<sup>4</sup>  
So that they can grow and know that our cattle are worth*

The father goes to rule in England, he comes back with a big car, which carries shining beads. The women collect the beads. Although through the word 'give' the woman is seen to be a provider her action is just intermediary to that of the man. In the same song, the mother is given beautiful hair which she distributes to Esther and Deborah. This distribution is not an act of providing but one of serving because she has received and is giving out, this makes her an instrument and not the source. This secondary placement of the mother makes her subordinate to the father who has provided the adornments. Such a representation constructs women as recipients waiting to receive from a man and puts men (the providers) in a power holding and controlling position. Kuria people hold a very strong position in terms of gender division of labour, to the extent that it is taboo for a married man to clean a house because that is considered to be a feminine duty and performing it makes him a woman and therefore weak. Constructing him as performing power related activities in the songs is therefore a reflection of cultural expectations of gender.

### 8. Gendered discourses in Kuria FGM songs

The following subsections present discourses identified through the metaphors in the songs.

#### 8.1. Woman as mother

The *tree* and *chicken* metaphors are the main cues in the construction of the 'woman as mother' discourse. Through the *tree* and *chicken* metaphor a Kuria woman is expected and encouraged to bring forth many children, just like a tree that has been planted by the river and which bears fruit from season to season. This emphasises the importance of motherhood among the Kuria. A Kuria home that has many children is considered rich. This is why the woman is encouraged to keep giving birth in order to propagate her husband's family line and make him rich. The woman is also reminded to guard her children like a chicken does her chicks. This reiterates the role of a woman as the carer and nurturer of her children once she is a mother. Once a baby has been born it is the sole responsibility of the mother to ensure he/she grows up to be a respectable human being. Child care is primarily a woman's duty with men being uninvolved or only remotely involved. Some men, particularly those who are polygamous with up to five wives or more, do not even know their children's names. The woman therefore uses what the man brings home to feed her children and to ensure they have a place to sleep. These are domestic duties which tie a woman to domestic spheres; she has no time to go out. This construction reaffirms the 'woman as domestic' and 'woman as private' discourses (see Atanga 2007) which legitimate and naturalise the status quo. Diapah & Amfo (2015) state that one of the marks of a good mother is her ability to provide for the nutritional needs of her family. This functionalization is a form of subservience and subordination of

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<sup>4</sup> Esther and Deborah are English names used for girls in Kuria. Most people in Kuria (and Kenya in general) would normally have an English name, a middle (home) name and a surname. English names are borrowed from the British (who colonised Kenya).

women and is perpetuated through FGM songs. The *tree* and *chicken* metaphors are used in Song 5.

Extract 1 (Song 5)

*Spread uncle's wife, spread, give birth and spread  
Spread, give birth and spread like a **tree** that has roots deep down  
Give birth like a **chicken** gives birth and guards*

As mothers, women are said to have borne men, strong men, men who are able to rule England, the community of the mighty, who are able to face enemies and defeat them, bring back stolen cattle. They are givers and source of life and important in the continuation of family life. Extract 2 exemplifies this.

Extract 2 (Song 23)

*A woman's son is **strong**  
He is enough to rule in England*

## 8.2. Woman as domestic

This is a dominant discourse in the songs with words such as serve, cook and fetch water being repeatedly used. These are used to represent a Kuria woman as predominantly performing domestic roles by portraying her as busy at home and in the house. This discourse has also been identified and named by Sunderland (2004) and Atanga (2007) in their analyses. In the songs women are constructed, for example, as family cooks, and family servers, serving in big bowls and huge sisal baskets. This depicts the ability and social expectation of a woman to ensure her children are well fed and her husband served. All these take place in the home within the walls of their huts. Women are the primary domestic servers whose main role is housework. This makes them active only about and around homes while other involvements are back-grounded. A respected Kuria home is one that expands and gets daughters in law who will perform these domestic chores and bring forth children. This discourse constructs a woman as being confined to the physical and social space of the home. Extract 3 from the same song summarises the domestic roles of a woman in a Kuria homestead.

Extract 3 (Song 5)

*Mother has healed us  
She has served us in a big **bowl** and a huge **basket**  
She has served us in a big sisal **bowl**  
Aye yee I bless it I bless a father's homestead so it grows so it grows  
So that it spreads till it gets the one who closes the gate, the one who opens the gate  
and the one who fetches water.  
Aye yee with whistles sounding whistles children blowing.*

In extract 4 'brother's wife' is hiding and is encouraged to come out. The fact that she is encouraged to 'come out' means her place is indoors (inside the house where she performs her domestic chores) and she has accepted this as the norm, only coming out when necessary.

Extract 4 (Song 18)

***Come out** my brother's wife **come out**  
I am praising you but you are hiding from me you are hiding as if I bite  
I praise you but you hide as if I bite*

These songs, sung during circumcision ceremonies, summarise the main roles of a Kuria woman once married: stay at home, perform domestic duties and bear children. 'Woman as domestic' discourse is shored up by other discourses such as woman as server, carer, and nurturer. If a woman does not perform these chores, she is considered shameful to both her husband and family and can be sent away or punished by her husband.

### 8.3. Woman as object

'Woman as object' discourse builds from the perception that women should pay attention to their physical appearance (Liu et al. 2012) to fulfil their roles as sex objects (Kosetzi 2007), being the focus of attention for men's sexual desires (Diapah & Amfo 2015). It relates to the 'woman as object of gaze' discourse which has been identified in previous literature. The earrings metaphor is the main trace of this discourse. This metaphor has been dominantly used to construct women as objects of gaze. It is explicitly stated in the songs that a woman is like an earring that men see and then they run to bring cattle by force from enemies so that they can pay dowry and possess her. Because she is purchased (through dowry payment) and owned by her husband, a Kuria woman has been reduced to an object with a value and a price tag attached to it and which can be traded in exchange for cattle. The earrings metaphor also significantly emphasises the aspect of beauty which makes women objects of gaze that men see and desire to own. In extract 5, women are constructed as objects of gaze through this metaphor:

Extract 5 (Song 18)

*Our women are **earrings**  
Those that we see and run fast  
We go to get cattle from our enemies  
We get the enemies' cattle by force and bring them home*

Once owned, women can be used by men in the ways men want since they are their property. In extract 6, women collect beads and adorn themselves. They then walk around enticing men. This presents them as objects of gaze. Men have to see them so that they can desire them. Then they may decide to marry them and pay dowry to their fathers, thereby owning them (also known as object ownership discourse).

Extract 6 (Song 14)

*Father... will come back with a big car that will be speeding  
With beads in there shining  
Girls will pick the beads and adorn themselves  
They will walk around enticing men  
So that that their fathers can get cattle*

Extract 7 (Song 4)

*Uncle is valuable I can send him far  
He will run to bring us necklaces shining and we get them  
And belts so that we adorn ourselves and go for a daughter in law from Wangirabose  
(name of place)*

From the above extract, the songs' producers predominantly construct women as objects of beauty worth looking at, *by men*, and meant for admiration. Women are therefore portrayed as spending time adorning themselves for 'male gaze'. They are defined by their beauty and appearance, with beautiful teeth to behold. They are also said to be attractive like necklaces. This attraction makes men act in 'manly ways'. This presentation can be captured in what Tam & Yip (2010) have described as the purpose of existence. They state that in men's perception, the purpose of a woman coming into the world is to bring beauty while the meaning of a man's existence is to conquer the world. This is why there are idealistic masculine images of men as saviours, protectors, rulers, leaders and conquerors, which are presented in the circumcision songs. Women on the other hand are there to be seen, admired and consequently owned.

In extract 8, 'brother's wife' is asked to laugh so that her teeth can be seen, which in an actual sense means that the teeth can be admired. The lexicon describing her teeth as being arranged in an orderly manner is used to praise her beauty and to legitimate her description as an object of admiration. This re-affirms the ideology of proper women having to be beautiful and men admiring them.

Extract 8 (Song 18)

*Laugh with me my brother's wife  
Laugh with me so I can see **your teeth**  
How they are they are **arranged like arrows** in the arrow bag  
.....*

#### 8.4. Man as protector

Through the shield metaphor a Kuria man is constructed as a protector, he protects his people (his household and the larger society in general) from all enemies. Among the Kuria, every man is always expected to be ready to face any human enemy or animal that might be invading his home. This is why each mature male member has a sword, shield and a spear used to protect his family. He protects his mother and other family members if his father is dead without minding what kind of danger he might be exposed to. Historically, whenever there is any form of invasion such as a wild animal attacking a homestead or neighbouring communities like the *Maasai* or *Kipsigis*<sup>5</sup> attacking Kuria homes, the role of women is to scream and alert the community while men go out to fight the enemy. A family that has many sons is considered the most secure because the enemy would be afraid of attacking such a family, therefore people use the metaphor, '*there are many shields in that family*' to refer to a home that has many sons. On the other hand, one without a son is considered vulnerable and prone to invasion. This is why the birth of a male child is considered more important than that of a female. As they grow up, boys are reminded of their role in the community and once circumcised<sup>6</sup> they are allowed to own a sword, spear and a shield while women are not. The

<sup>5</sup> These are names of communities that live in the Rift Valley province and who are Kuria neighbours.

<sup>6</sup> All Kuria men are circumcised between the ages of 13-18. Male circumcision is beyond the scope of this paper and research.

ability to own such gives a man power and strength to do anything in his home and outside. This ownership also puts him in a higher position hierarchically above the woman, see Song 4:

Extract 9 (Song 4)

*Uncle you are **shields**, you are **shields** that have been painted  
The **shields** that are carried by strong men who go after the cows  
They bring back the cows from the enemies the enemies that rule*

The shields are only carried by strong men. Strength is used in this case as one of the qualities of a proper man meaning those men who are not strong are regarded as women in that they are weak and cannot carry shields. They cannot face enemies in the battle field. They stay at home (just like women do) when real men go into war. The use of the *shield* metaphor closely relates to the *iron rod* metaphor that is used to construct men as strong and as protectors (Song 10). Iron rods are heavy metal bars which are used as raw materials for making doors and spears. They are strong and durable and cannot be broken easily. They are normally burned in a furnace for days before they can be twisted into the required shape. A Kuria man is constructed as an iron rod to show his expected strength and ability to face any eventuality in the line of protecting his property. The physical strength is a quality that a man must have to perform his socially ascribed duties such as protection, providing for his family and ruling his community. A home that has many such rods is described as ‘booming’ and ‘heavy’ since it is assured of utmost protection while the one that has daughters only is vulnerable to attacks. The use of this metaphor is similar to that of the ‘shield’ metaphor described above, all of which are used to ideologically construct Kuria men as different from women and to legitimate their dominant position in society.

Extract 10 (Song 10)

*A mother's house booms  
If there are **iron-rods** inside they shoot out  
They spread in the cow shed and reach out to the ponds*

### 8.5. Man as provider

In the FGM songs a Kuria man is prevalently constructed as a provider. This is evident in the *mushroom* metaphor. A mushroom is a fungal growth which characteristically takes the form of a domed cap on a stalk. The stalk functions as a pillar supporting the cap. In most cases the cap gets wider and heavier as the mushroom grows, while the stalk is normally thin but sturdy to take the weight on its head. A Kuria man is constructed as a mushroom (see Extracts 11 and 12), making him a pillar that supports the head which contains all those who depend on him for support and provision of nutrients. The shape of the mushroom is such that there is only one pillar with the head depending on it. The man is taken to be that pillar, while his family members and other property constitute the head. Although the head is always heavy and rests its weight on the pillar depending on it for everything, the pillar still stands strong supporting it and providing all that is needed. Without the pillar the mushroom cannot stand and this shows how important a man is to his family and his community. It shows the role of the man in the development of his family. Any time the pillar falls the whole mushroom is destroyed.

---

## Extract 11 (Song 4)

*Uncle is worth he is worth like **irinyansaka (mushroom)**  
He is like **irinyansaka (mushroom)** from Kiribo(name of a place) the one with  
a long root*

## Extract 12 (Song 10)

*A father's home is strong  
Like a **mushroom** from Kiribo it spreads*

In Songs 4 and 10 above, the home of a man is described as being strong like *irinyansaka* 'mushroom', the one from Kiribo with a long root. This shows how a man is perceived to be strong and it is only a strong man that can erect a strong homestead, where his people are well protected from enemies and any looming danger. Therefore not only does a man have to be a strong pillar to support his family in all ways but also his home needs to be strong enough. This is why men whose homes are ramshackle and sloping are always ridiculed and described as women.

'Man as provider' discourse is also supported through the ownership of property that the man gives to those who depend on him for support. This includes providing 'girls' with beauty products that they use to adorn themselves as seen in Extract 13.

## Extract 13 (Song 14)

*Father... will come back with a big car that will be speeding  
With beads in there shining  
Girls will pick the beads and adorn themselves  
They will walk around enticing men  
So that that their fathers can get cattle  
.....  
Mother What I have brought you is **beautiful hair**  
To give to Esther and Deborah  
So they can **adorn** themselves... and know that our cattle are worth  
Mother...what I have **brought you** are **belts**  
So you can tie and go for a daughter in law in Wangirabose*

In extract 13 the woman is constructed as a receiver; she receives beads and adorns herself so she can entice men. She also receives beautiful hair, and gives to Esther and Deborah to adorn themselves so that they can fetch cattle (dowry) for their fathers. When she receives belts, she adorns herself and that is when she goes out but only to bring home her daughter in law, who is expected to relieve her of most of her domestic chores (see Ellece 2007). That she receives most things from him makes him the sole provider. Even when she is giving out beautiful hair to Esther and Deborah, this is not an act of providing for them, she only acts as an intermediary through which the man provides for the girls. This representation of woman depending on man for almost everything reinforces the inequalities between the two. It legitimates man's taking credit for everything his woman has and consequently dominating her. Her progress, both materially and physically entirely depends on him thereby legitimating her subordinate position and his dominance which in turn gives him power and control over her. Note that there is emphasis on physical beauty on the part of the women presupposing that a woman is only proper if she is beautiful; that way she can be admired by a man who

will propose and marry her and her father will in turn get cattle. This restates the ‘woman as object’ discourse discussed earlier.

### 8.6. *Man as physically strong*

Through the *thunder* metaphor, a Kuria man is constructed as strong and destructive; hence making those under his control fear him. Thunderstorms are a common phenomenon in Kuria and Kisii highlands. The occurrence of thunder is always destructive and leaves behind a trail of property loss and sometimes deaths. In Kuria there have been cases where thunder strikes split huge trees into pieces and reduce homes to rubble. The thunder metaphor therefore constructs a man as having incomparable physical strength that he needs to perform duties such as leading other men to face enemies in times of invasion. This construction of man is meant to instil fear among those under his control and to give him authority over those he rules. The destructive nature of thunder cannot be prevented or stopped - it has to take its course since it is natural. In extract 18 the thunder metaphor is explicitly employed to ideologically construct men in this way.

Extract 14 (Song 10)

*Our men are like **thunder**  
They split trees with their hands  
If there is cry for help from Muyuyi (place name) they will reach  
They will stand firm with **shields**  
With **shield** and protect our people  
Our men are like **thunder**  
They protect us till we are safe*

### 9. *Implications*

From the analysis, the main observation is that gender is constructed in a binary and contrastive way. Women are constructed as givers of life, mothers, carers, nurturers and servers. This is through the tree and chicken metaphors, where women’s main role is motherhood. Apart from bearing children and caring for them, women are expected to be active in home making, serving both children and husbands and adorning themselves to attract men for marriage. All these take place within domestic spheres, thus restricting women to their physical home environment. Women are also constructed as timid and dependent on men for protection and provision. This dependence attribute places them below and subordinate to men to an extent that if men do not provide then women do not have anything to live on or to adorn themselves with. This legitimates unequal gender and power relations between men and women by positioning men above women.

Men on the other hand are constructed as strong, protectors and providers. They provide both physical and material needs, including the beauty products that women use to adorn themselves to be attractive to the same men. This provision is therefore seen as a means to an end - to acquire and own women for both material and sexual needs. These constructions reproduce and reinforce traditional and conservative gender norms and ideals of the Kuria people. They legitimate hegemonic masculinity - the traditional authority, power and control of men and subordination of women, and hegemonic femininity which guarantees the dominant position of men over women. Because it is women who perform and actively sing

these songs, it can be stated that they have accepted and complied with traditional understandings that men are superior to women - this is how hegemony works - and perpetuate this, without coercion, every female circumcision season.

Discourses in these songs present positions that appear to be natural and common sense and consequently unquestionable in the Kuria society. They therefore succeed in persuading women into believing and accepting that these gendered practices are positive and constitute what makes a Kuria society, hence becoming difficult to challenge them. The role of CDA is to uncover hidden agendas ingrained in discourse (Lazar 2005; Litosseliti 2006). These songs implicitly serve the interests of men by safeguarding hegemonic masculinity by, for instance, constructing women as timid, dependent and domestic and therefore in need of men for protection and provision. Putting pressure on them to be beautiful, active home makers and mothers in order to be worth of men's attention is seen as men's means to an end - to obtain women as their property.

### *10. Conclusions*

In conclusion, therefore, the analysis reveals that Kuria FGM songs reflect traditional conservative ideals. They reinforce traditional gender roles, asymmetrical power positions and restate expected behaviours that both men and women should abide by without violating. Even with the current change in trends on women's roles and gender positions in the rest of the world, change in Kuria is being hindered by the continued use of, and repetition of, the songs from one FGM season to another. These lead to a continued naturalisation of asymmetrical relations and presentation of imbalances as normal, expectable and acceptable, even good. There is therefore need for awareness of the role of language in legitimating gender inequalities and FGM. This can be done through actions that promote gender equality such as publicity initiatives, and policies and programmes aimed at improving equality at the national level. It can also be done through developing a more nationalised policy on gender, changes in gender representations in school books, media and other avenues and, most importantly, more research projects on gender. Locally, in the Kuria context, gender equality and anti-FGM activists and organisations could develop songs that contain messages that portray men and women in similar positions. These songs could be disseminated to the local people through mass media outlets such as radio and TV. The messages in the songs, if heard from time to time, may eventually start to be internalised and the listeners may start to question the truth in the FGM songs once they are exposed to a discourse that challenges the present deeply ingrained beliefs circulating through these songs. In this way, it is hoped that change will be realised.

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## Focus intervention effects in neg-raising

Christos Christopoulos

Neg-Raising (NR) is shown to be subject to Focus Intervention Effects (FIEs), just like wh-in-situ has been shown to be (Beck 1996, 2006). With a view to deriving FIEs in NR and wh-in-situ in a unified manner, I combine the framework of Beck (2006) with the theory of NR in Romoli (2013), plus one additional assumption, namely, that just like an expression's focus value, an expression's scalar value is unavailable for further computation once the ordinary value of that same expression is referred to by the focus operator. The apparent 'optionality' of NR in basic NR-constructions is also accounted for in terms of FIEs.

### 1. Background

#### 1.1. Beck 2006: FIEs in wh-in-situ

Patterns such as (1) have been observed in a number of languages (for a review, see Beck 2006), and have led to the generalization in (2), which bans the licensing of a wh-phrase across a focussed element (Kim 2002; Beck 2006).

- (1) a. \**Minsu-man nuku-lûl* po-ss-ni?  
Minsu-ONLY who-ACC see-PST-Q  
Intended: 'Who did only Minsu see?'  
b. *Minsu-nun nuku-lûl* po-ss-ni?  
Minsu-TOP who-ACC see-PST-Q  
'Who did Minsu see?'  
c. *nuku-lûl Minsu-man* po-ss-ni?  
who-ACC Minsu-ONLY see-PST-Q  
'Who did only Minsu see?' (Korean, Beck 2006:3)
- (2) \*[Q<sub>i</sub> [...FocP [...wh-phrase<sub>i</sub>...]]] (Kim 2002)

Beck (2006) proposes a way of capturing this generalization. Following Rooth (1992), she assumes that an expression  $\alpha$  is associated with two semantic objects, namely, an *ordinary value*,

i.e. its truth conditions, and a set of alternatives to the ordinary value, a *focus value*. Following Kratzer (1991) she assumes two assignment functions:  $g$  which is responsible for the assignment of the ordinary value of  $\alpha$ ,  $\llbracket \alpha \rrbracket^g$ , and  $h$  which is responsible for assigning its focus value  $\llbracket \alpha \rrbracket^{g,h}$ . When  $\alpha$  includes no focussed elements,  $\llbracket \alpha \rrbracket^{g,h}$  only contains  $\llbracket \alpha \rrbracket^g$ . When an element is focussed, a variable is introduced for this element, marked as an index. When  $\alpha$  does include such variables,  $\llbracket \alpha \rrbracket^{g,h}$  will be the set of alternatives to  $\llbracket \alpha \rrbracket^g$ , where the focussed element is variable. (3) illustrates how this system works, using the expression ‘John<sub>F1</sub> left’, where ‘John’ is a focussed element.

- (3) a. (i)  $\llbracket \text{John}_{F1} \rrbracket^g = \text{John}$   
 (ii)  $\llbracket \text{John}_{F1} \rrbracket^{g,h} = h(1)$   
 b. (i)  $\llbracket \text{left} \rrbracket^g = \lambda x. \lambda w. x \text{ left in } w.$   
 (ii)  $\llbracket \text{left} \rrbracket^{g,h} = \lambda x. \lambda w. x \text{ left in } w.$   
 c. (i)  $\llbracket \text{John}_{F1} \text{ left} \rrbracket^g = \lambda x. \lambda w. \text{John left in } w.$   
 (ii)  $\llbracket \text{John}_{F1} \text{ left} \rrbracket^{g,h} = \lambda x. \lambda w. h(1) \text{ left in } w.$  (Beck 2006:14).

The focus operator,  $\sim$ , binds focus variables and evokes a set of propositions C, here propositions of the type ‘x left’, which is anaphorically bound in the context. The  $\sim$  adds nothing to the ordinary value of the expression. Importantly, it resets the focus value of the expression to its ordinary value. Beck’s definition of  $\sim$  is in (4).

- (4) If  $X = [\sim C Y]$  then  
 a.  $\llbracket X \rrbracket^g = \llbracket Y \rrbracket^g$  if  $g(C) \subseteq \{ \llbracket Y \rrbracket^{g,h'} : h' \in H \ \& \ h' \text{ is total} \}$ ,  
 undefined otherwise.  
 b.  $\llbracket X \rrbracket^{g,h} = \llbracket X \rrbracket^g$  (Beck 2006:15)

Thus, application of  $\sim$  to the expression ‘John<sub>F1</sub> left’ results in (5).

- (5) a.  $\llbracket \sim C \text{John}_{F1} \text{left} \rrbracket^g = \llbracket \text{John}_{F1} \text{left} \rrbracket^g$  if  $g(C) \subseteq \{ \lambda w. x \text{ left in } w : x \in D \}$ ,  
 undefined otherwise.  
 b.  $\llbracket \sim C \text{John}_{F1} \text{left} \rrbracket^{g,h} = \llbracket \sim C \text{John}_{F1} \text{left} \rrbracket^g$

Beck assumes that wh-expressions don’t have ordinary values; they only have focus values, as illustrated in (6).

- (6)  $\llbracket \text{who}_1 \rrbracket^g = \text{undefined}$   
 $\llbracket \text{who}_1 \rrbracket^{g,h} = h(1)$

FIEs arise in wh-questions when  $\sim$  scopes between a wh-expression and its licensor/binder, the Q-operator. Since wh-expressions have no defined ordinary values themselves, any expression that contains them will also not have a defined ordinary value, until this wh-expression is bound by the Q-operator. The problem arises when  $\sim$  intervenes between the wh-expression and the Q-operator, because it resets the focus value of the expression containing the wh-expression to its ordinary value, in this case, to ‘undefined’. The entire structure inherits undefinedness, since the Q-operator no longer has access to the variable introduced by the wh-expression, hence the uninterpretability of (1-a). When, however, the wh-expression is interpreted outside the scope of the focus operator, as in (1-c), the FIE is voided, because now the variable introduced by the wh-expression will be able to be bound by the Q-operator. In what follows, I show that NR

is also subject to FIEs, though in the case of NR, FIEs manifest as a loss of an inverse-scope effect between negation and the NRP rather than as outright unacceptability. I will argue that, given a particular account of NR, Romoli (2013), Beck's framework can be used to derive FIEs in NR with only one additional assumption, namely that, like focus values, scalar values of an expression are reset to ordinary values once  $\sim$  makes reference to that expression's ordinary value. But first, a brief introduction to the basic facts of NR.

### 1.2. Basic NR facts

Certain predicates can take wide scope over negation. I refer to these as Neg-Raising Predicates (NRPs), and to the phenomenon they give rise to as NR (e.g. Fillmore 1963; Horn 1978; Veloudis 1982; Horn 1989; Gajewski 2005, 2007; Homer 2012; Romoli 2012, 2013; Collins & Postal 2014). As is well known, NR is not a phenomenon specific to English (see e.g. Horn 1989; Popp 2016); the data in (7-b) and (8-b) are from Cypriot Greek (Greek henceforth).<sup>1</sup> (7-a-ii) and (7-b-ii) show that *claim*-type predicates are not NRPs, because they cannot be interpreted with wide scope over negation, while (8-a-ii) and (8-b-ii) show that *believe*-type verbs are NRPs, because they can. Note that, whereas NRPs *can* take wide scope with respect to negation, they don't seem to *have to*, as shown in (8-a-i) and (8-b-i). We return to this last point towards the end of the paper.

#### (7) Non-NRPs

- a. John doesn't **claim** that God exists.
- (i) ✓ 'It's not the case that John claims that God exists.' [NEG[CLAIM]]
- (ii) ✗ 'John claims that God doesn't exist.' [CLAIM[NEG]]
- b. ο jannis en **ixirizete** oti iparxi θεος.  
the John NEG claims that exists God
- (i) ✓ 'It's not the case that John claims that God exists.' [NEG[CLAIM]]
- (ii) ✗ 'John claims that God doesn't exist.' [CLAIM[NEG]]

#### (8) NRPs

- a. John doesn't **believe** that God exists.
- (i) ✓ 'It's not the case that John believes that God exists.' [NEG[BELIEVE]]
- (ii) ✓ 'John believes that God doesn't exist.' [BELIEVE[NEG]]
- b. ο jannis en **pistefki** oti iparxi θεος.  
the John NEG believes that exists God
- (i) ✓ 'It's not the case that John believes that God exists.' [NEG[BELIEVE]]
- (ii) ✓ 'John believes that God doesn't exist.' [BELIEVE[NEG]]

The empirical goal of this paper is to show that the inverse-scope effect between negation and the NRP in (8-a-ii) and (8-b-ii) becomes unavailable when a focus operator scopally intervenes between negation and the NRP. Before doing that, I will provide evidence that the particular scope position of the focus operator between negation and the verb can be independently identified. To this effect, I turn to focussed subjects in Greek.

<sup>1</sup>All Greek data in this paper are from Cypriot Greek. To the best of my knowledge, all the examples I present in Cypriot Greek can also be constructed for Standard Greek with similar judgements.

## 2. Data

## 2.1. Greek focussed subjects and negation

Unlike English, Greek allows both pre-verbal and post-verbal subjects. Both sentences in (9), under neutral intonation, assert that the proposition ‘John doesn’t go to church’ is true.

- (9) a. **o jannis** en pai eklisia.  
the John NEG goes church  
‘John doesn’t go to church.’  
b. en pai **o jannis** eklisia.  
NEG goes the John church  
‘John doesn’t go to church.’

We know that once an expression is focussed, alternatives for this expression are evoked, and we also know that alternatives grow into propositional alternatives via functional application. Now, a difference emerges in the propositional alternatives that can be evoked by focussing pre-verbal versus post-verbal subjects. Whereas focussed pre-verbal subjects (in negative sentences) only lead to readings where the evoked propositional alternatives are of the type ‘x doesn’t go to church’, focussed post-verbal subjects interestingly lead to readings where the evoked propositional alternatives are of the type ‘x goes to church’ in addition to readings where the evoked propositional alternatives are of the type ‘x doesn’t go to church’. In (10), each reading is matched with a continuation that is felicitous only under that reading.

- (10) a. **o JANNIS** en pai eklisian... (, oi i MARIA /#alla i MARIA).  
the John NEG goes church... (, not the Mary /but the Mary)  
(i) ✓ ‘JOHN is the one that doesn’t go to church, not MARY.’  
(ii) ✗ ‘It’s not the case that JOHN is the one that goes to church, but MARY.’  
b. en pai **o JANNIS** eklisian... (, oi i MARIA /alla i MARIA).  
NEG goes the John church... (, not the Mary /but the Mary)  
(i) ✓ ‘JOHN is the one that doesn’t go to church, not MARY.’  
(ii) ✓ ‘It’s not the case that JOHN is the one that goes to church, but MARY.’

If we assume that the kinds of propositional alternatives evoked depends on the scope of the  $\sim$  that the focussed item associates with, then Greek focussed post-verbal subjects in negative sentences make available pairs of sentences minimally differing from each other as regards the scope of the  $\sim$ : (10-b) can either be associated with a structure where the  $\sim$  takes wide scope with respect to negation, or a structure where the  $\sim$  takes narrow scope with respect to negation. In fact, the two different readings of (10-b) are also differentially marked by intonation. Whereas for the reading where the  $\sim$  scopes over negation the focussed element receives a rising intonation, for the reading where the  $\sim$  scopes below negation the focussed element receives falling intonation.<sup>2</sup> Moreover, a negative sentence with a focussed post-verbal subject with rising intonation cannot evoke alternatives of the type ‘x goes to church’, and one with a focussed post-verbal subject with falling intonation cannot evoke alternatives of the type ‘x

<sup>2</sup>The characterisation of intonation as rising/falling is rough. What is important here, is that there is a contrast that approximates the characterization. Baltazani (2002) and Giannakidou (2012) also discuss the case where ‘pitch accent’ on a particular element leads to its wide scope interpretation over negation. These authors are referring to the phenomenon, whereby, what I call ‘rising-intonation’, in (10-b) leads to the interpretation in (10-b-i).

doesn't go to church'. This is shown in (11), where rising and falling intonation is marked by ↗ and ↘ respectively.

- (11) a. en pai o J↗ANNIS eklisian, oi i MARIA /#alla i MARIA.)  
 NEG goes the john church, not the Mary /but the Mary)  
 'JOHN is the one that doesn't go to church, not MARY.'
- b. en pai o J↘ANNIS eklisian, #oi i MARIA /alla i MARIA.)  
 NEG goes the john church, not the Mary /but the Mary)  
 'It's not the case that JOHN is the one that goes to church, but MARY.'

The intonational facts allow us to identify a construction where the ~ always takes narrow scope with respect to negation (and wide scope with respect to the verb), namely, (12-d). Focussed pre-verbal subjects can only receive rising intonation, consistent with the fact that the ~ they associate with cannot scope below negation. A more detailed description of the data, that includes the intonational markings, is laid out in (12).

- (12) a. o J↗ANNIS en pai eklisia.  
 the john NEG goes church  
 (i) ✓ 'JOHN is the one that doesn't go to church' [FOC[NEG]]  
 (ii) ✗ 'It's not the case that JOHN is the one that goes to church' [NEG[FOC]]
- b. \*o J↘ANNIS en pai eklisia.  
 the john NEG goes church
- c. en pai o J↗ANNIS eklisia.  
 NEG goes the john church  
 (i) ✓ 'JOHN is the one that doesn't go to church' [FOC[NEG]]  
 (ii) ✗ 'It's not the case that JOHN is the one that goes to church' [NEG[FOC]]
- d. en pai o J↘ANNIS eklisia.  
 NEG goes the john church  
 (i) ✗ 'JOHN is the one that doesn't go to church' [FOC[NEG]]  
 (ii) ✓ 'It's not the case that JOHN is the one that goes to church' [NEG[FOC]]

As shown in (13), things are the same when subjects are associated with the adverb 'only', an element which is typically taken to involve focus. Just like the scope of the ~, the scope of 'only' with respect to negation can vary when 'only' is post-verbal but not when it is pre-verbal. The prosodic facts about how the scope of 'only' is marked on the focussed element remain as above.<sup>3</sup>

- (13) a. monon o J↗ANNIS en pai eklisia.  
 only the john NEG goes church  
 (i) ✓ 'JOHN is the only one that doesn't go to church'  
 [ONLY[NEG]]  
 (ii) ✗ 'It's not the case that JOHN is the only one that goes to church'  
 [NEG[ONLY]]
- b. \*monon o J↘ANNIS en pai eklisia.  
 only the john NEG goes church

<sup>3</sup>The adverb *monon* 'only' may alternatively be marked with the appropriate rising/falling intonation depending on its scope, in the same way as focussed elements can. These cases are not be discussed here.

- c. en pai **monon o J/ANNIS** eklisia.  
 NEG goes only the john church  
 (i) ✓‘JOHN is the only one that doesn’t go to church’  
 [ONLY[NEG]]  
 (ii) ✗‘It’s not the case that JOHN is the only one that goes to church’  
 [NEG[ONLY]]
- d. en pai **monon o J\ANNIS** eklisia.  
 NEG goes only the john church  
 (i) ✗‘JOHN is the only one that doesn’t go to church’  
 [ONLY[NEG]]  
 (ii) ✓‘It’s not the case that JOHN is the only one that goes to church’  
 [NEG[ONLY]]

We have now identified a construction where the  $\sim$  always scopes between the negation and the verb, namely, the negative sentence with a focussed post-verbal subject receiving falling intonation. We shall see that in exactly these constructions, and not in the rest of the constructions discussed in this section, NR is unavailable.

## 2.2. FIEs in NR

In this section, I show that, when  $\sim$  scopally intervenes between the negation and NRPs, the inverse-scope effect that is otherwise available becomes unavailable. The data in (14) show that NR fails precisely when focus scopes between negation and the verb.

- (14) a. **o J/ANNIS** en pistefki oti iparxi theos. (NR)  
 the John NEG believes that exists God  
 (i) ✗‘It’s not the case that JOHN is the one that believes that God exists.’  
 [NEG[FOC[NRP]]]  
 (ii) ✓‘JOHN is the one that believes that God doesn’t exist.’  
 [FOC[NRP[NEG]]]
- b. en pistefki **o J/ANNIS** oti iparxi theos. (NR)  
 NEG believes the John that exists God  
 (i) ✗‘It’s not the case that JOHN is the one that believes that God exists.’  
 [NEG[FOC[NRP]]]  
 (ii) ✓‘JOHN is the one that believes that God doesn’t exist.’  
 [FOC[NRP[NEG]]]
- c. en pistefki **o J\ANNIS** oti iparxi theos. (\*NR)  
 NEG believes the John that exists God  
 (i) ✓‘It’s not the case that JOHN is the one that believes that God exists.’  
 [NEG[FOC[NRP]]]  
 (ii) ✗‘JOHN is the one that believes that God doesn’t exist.’  
 [FOC[NRP[NEG]]]

The same results arise when the adverb ‘only’ associates with the focussed subject, as in (15).

- (15) a. **monon o J/ANNIS** en pistefki oti iparxi theos. (NR)  
 only the John NEG believes that exists God

- (i) ✗ ‘It’s not the case that JOHN is the only one that believes that God exists’  
[NEG[ONLY[NRP]]]
- (ii) ✓ ‘JOHN is the only one that believes that it’s not the case that God exists’  
[ONLY[NRP[NEG]]]
- b. en pistefki **monon o J**↗ANNIS oti iparxi θεος. (NR)  
NEG believes only the John that exists God
- (i) ✗ ‘It’s not the case that JOHN is the only one that believes that God exists’  
[NEG[ONLY[NRP]]]
- (ii) ✓ ‘JOHN is the only one that believes that it’s not the case that God exists’  
[ONLY[NRP[NEG]]]
- c. en pistefki **monon o J**↘ANNIS oti iparxi θεος. (\*NR)  
NEG believes only the John that exists God
- (i) ✓ ‘It’s not the case that JOHN is the only one that believes that God exists’  
[NEG[ONLY[NRP]]]
- (ii) ✗ ‘JOHN is the only one that believes that it’s not the case that God exists’  
[ONLY[NRP[NEG]]]

We conclude that, just as in the licensing of wh-questions discussed in Beck (2006), where a  $\sim$  that scopally intervenes between the wh-phrase and its licenser leads to uninterpretability, when a  $\sim$  scopes between negation and the NRP, the inverse-scope effect between negation and the NRP becomes unavailable, i.e. we conclude that NR is subject to FIEs. The results of this section are summarized by the generalization in (16).

(16) **NR is unavailable for the LF configuration [NEG[ $\sim$ ][NRP]]].**

This adds to the list of phenomena that are subject to FIEs (for data and discussion, see Beck 2006). In what follows, I present the account of NR proposed in Romoli (2013). I then propose that if we combine Romoli’s proposal with the general framework for dealing with FIEs proposed in (Beck 2006), plus an additional assumption about the life of an expression’s scalar alternatives in the derivation, FIEs in NR and wh-questions can receive a unified account.

### 3. Account

#### 3.1. Romoli 2013: A scalar-implicature approach to NR

Semantic/pragmatic accounts of NR (e.g. Bartsch 1973; Gajewski 2005, 2007; Romoli 2012, 2013), argue that negation in sentences like (8-a) and (8-b) is base-generated in the matrix clause.<sup>4</sup> What distinguishes NRPs from non-NRPs is that the former are lexically specified with an Excluded Middle (EM), i.e. (NRPp)  $\vee$  (NRP $\neg$ p). Revising the presuppositional treatment of NRPs in (Gajewski 2005, 2007), Romoli (2013) proposes that the EM is an element of a set of scalar alternatives introduced by the NRP. This assumption is couched in a framework for deriving Scalar Implicatures (SIs) via exhaustification in the grammar (Chierchia 2004; Fox 2007;

<sup>4</sup>This is a departure from the traditional, syntactic accounts of NR, where it is assumed that NR is a result of the movement of negation from an embedded clause to a matrix clause and its subsequent reconstruction see e.g. Collins & Postal (2014). Though syntactic accounts of NR are not discussed here, it should be noted that the FIE-facts are non-trivial for these either. Specifically, such accounts would have to explain why negation cannot raise/reconstruct across a  $\sim$ . Though this might be possible, I don’t explore this direction further here.

Chierchia et al. 2012). This approach holds that on top of its ordinary value, an expression also has a scalar value. This is reminiscent of the Roothian treatment of focus assumed by Beck. In contrast to focus alternatives, scalar alternatives are ordered by entailment. But like focus alternatives, scalar alternatives grow by functional application of expressions that themselves have scalar values. An expression's scalar value is the same as its ordinary value if this expression does not involve scalar items, but different from it in case the expression does include scalar items, as in (17).

- (17) For any lexical entry  $\alpha$ ,  $\llbracket \alpha \rrbracket^s =$
- $\{\llbracket \alpha \rrbracket^g\}$  if  $\alpha$  is lexical and does not belong to a scale (where a 'scale' is a set of expressions partially ordered by entailment)
  - $\{\llbracket \alpha_1 \rrbracket^g \dots \llbracket \alpha_n \rrbracket^g\}$  if  $\alpha$  is lexical and part of a scale  $\langle \llbracket \alpha_1 \rrbracket^g \dots \llbracket \alpha_n \rrbracket^g \rangle$
- (adapted from Romoli 2013:306)<sup>5</sup>

This theory also assumes the existence of a syntactic operator EXH (akin to a silent 'only' except the argument of EXH is not presupposed to be true) which applies to propositional alternatives and negates all scalar alternatives that can be negated without contradicting the ordinary value of the proposition. The definition in (18) is adapted from Romoli (2013).

- (18)  $\text{EXH}(\llbracket p \rrbracket^s)(\llbracket p \rrbracket^g)(w) = (\llbracket p \rrbracket^g)(w) \wedge \forall q \in \{q \in \llbracket p \rrbracket^s : \lambda w[\neg q(w)] \cap p \neq \emptyset\}[\neg q(w)]$
- (adapted from Romoli 2013:306)

After the application of EXH, the resulting propositional alternatives are conjoined together to give the meaning of the sentence, i.e. its assertion plus any scalar implicatures. Scalar implicatures arise when EXH applies at a point in the derivation where the ordinary value of the expression is not stronger than (i.e. does not entail) the scalar alternatives of this expression. The monotonicity of the environment in which the scalar item is at the time of exhaustification is thus of crucial importance. Now, Romoli's proposal is that NRPs are scalar items and that their scalar alternative is their EM. As shown in (19), in an affirmative sentence with a NRP, the EM is a weaker proposition than the asserted proposition, and exhaustification will therefore be vacuous.<sup>6</sup>

- (19) **PF:** John believes  $p$ .  
**LF:**  $[\text{EXH} [\text{B}_j p]]$   
**S-alternatives visible to EXH:**  $\{(\text{B}_j p \vee \text{B}_j \neg p), \text{B}_j p\}$   
**Exhaustification:**  $(\text{B}_j p \vee \text{B}_j \neg p) \wedge \text{B}_j p = \text{B}_j p$   
**Interpretation:** 'John believes  $p$ '

In a negative sentence as in (20), on the other hand, the proposition containing the EM is stronger than the asserted alternative, and therefore exhaustification is not vacuous. This means that the already negated EM alternative is negated by EXH, giving us back the affirmative version of the same proposition which is then interpreted together with the assertion, yielding NR.

<sup>5</sup>I use the notation  $s$  for the function from expressions to sets of interpretations instead of Romoli's *Alt* (for 'alternatives'). This is to avoid confusion with focus and scalar alternatives. I also adapt Romoli's notation to that of Beck's by adding the superscript  $g$  for the assignment function of ordinary values, for clearer comparison.

<sup>6</sup>In any of the cases where EXH would apply vacuously, we can also assume that it does not apply at all.

- (20) **PF:** John doesn't believe p.  
**LF:** [EXH[¬ [B<sub>j</sub>p]]]  
**S-alternatives visible to EXH:** {¬(B<sub>j</sub>p ∨ B<sub>j</sub>¬p), ¬B<sub>j</sub>p}  
**Exhaustification:** ¬¬(B<sub>j</sub>p ∨ B<sub>j</sub>¬p) ∧ ¬B<sub>j</sub>p = (B<sub>j</sub>p ∨ B<sub>j</sub>¬p) ∧ ¬B<sub>j</sub>p = B<sub>j</sub>¬p  
**Interpretation:** 'John believes ¬p'

Note that whether or not the NR inference will arise, depends on whether the scalar item is in an upward or a downward monotonic context at the time of exhaustification (just like a universal quantifier under the grammatical approach to SIs); only if NRPs are in the latter kind of context at the time of exhaustification does NR arise. I will show that we can use Beck's framework to deal with FIEs in NR if, in addition to Romoli's account, we also assume that the  $\sim$  also resets scalar values (not just focus values) to ordinary values.

### 3.2. Beck + Romoli + an additional assumption

Recall that Beck assumes that the  $\sim$  binds focus variables and then resets the focus value of the expression in its scope to its ordinary value. The definition is repeated in (21).

- (21) (Beck's version) If  $X=[\sim C Y]$  then
- a.  $\llbracket X \rrbracket^g = \llbracket Y \rrbracket^g$  if  $g(C) \subseteq \{\llbracket Y \rrbracket^{g,h'} : h' \in H \ \& \ h' \text{ is total}\}$ , undefined otherwise.
  - b.  $\llbracket X \rrbracket^{g,h} = \llbracket X \rrbracket^g$

We have seen that FIEs in NR arise when a  $\sim$  scopally intervenes between the negation and the NRP. Assuming Romoli's account, NR (i.e. a scalar implicature) will not be available if, at the time of exhaustification, the ordinary value of the expression is the strongest among its scalar alternatives. But as long as we exhaustify while the scalar item (i.e. the NRP) is in the scope of a downward entailing operator such as negation, NR will always ensue. What we need is for the scalar alternatives to not be evaluated at a time when the scalar item is in a downward entailing environment. I propose that a way of capturing this is to assume a particular commonality between focus and scalar alternatives, namely, that the  $\sim$  resets both the focus value and the scalar value of the expression in its scope once it makes use of that expression's ordinary value. This way, neither focus nor scalar alternatives will be available for further computation once a  $\sim$  that c-commands the relevant focus/scalar items applies. To capture this, we only need to amend the second clause of Beck's definition of the  $\sim$  to include the neutralization of the scalar value of the expression in the operator's scope. The modification is in (22).<sup>7</sup>

- (22) (Revised version) If  $X=[\sim C Y]$  then
- a.  $\llbracket X \rrbracket^g = \llbracket Y \rrbracket^g$  if  $g(C) \subseteq \{\llbracket Y \rrbracket^{g,h'} : h' \in H \ \& \ h' \text{ is total}\}$ , undefined otherwise.
  - b.  $\llbracket X \rrbracket^{g,h,s} = \llbracket X \rrbracket^g$

In the Greek negative constructions involving focussed post-verbal subjects with falling intonations, EXH will have no scalar alternatives to evaluate, since the scalar value of the NRP would be now inaccessible after the application of  $\sim$ .

<sup>7</sup>A theoretical question that this modification raises is why  $\sim$  resets scalar values. A tentative answer to this question might be that scalar values and focus values are actually dependent on the same assignment function. But whether  $s$  and  $h$  can be collapsed into one, deserves closer investigation.

- (23) **PF:** en pistefki o J\ANNIS oti iparxi θεος.  
**LF:** [EXH[¬[¬C [B<sub>jF</sub>p]]]  
**Evoked F-alternatives:** {λw. B<sub>x</sub>p in w x: x ∈ D }  
**S-alternatives visible to EXH:** {¬B<sub>j</sub>p}  
**Exhaustification:** ¬B<sub>j</sub>p  
**Interpretation:** ‘It’s not the case that JOHN is the one that believes that God exists’

This modification makes it possible to account for FIEs in wh-questions and NR in a unified manner. Any difference in the manifestation of the effect, e.g. the uninterpretability effect in wh-questions versus the absence of a strengthened reading in negative constructions with NRPs, follows from the independent semantic properties of wh-items versus scalar items assumed here.

#### 4. FIEs and the ‘optionality’ of NR

In the first section, I presented the basic NR data in a way that suggested that NR might be ‘optional’, in the sense that constructions such as (8-a) and (8-b) may either give or not give out an inverse-scope effect. However, things don’t seem to be as optional, once one factors in the intonation that is associated with each of the readings of such constructions. It has been observed that the cases where surface-scope readings are available for basic NR-constructions, typically involve focus stress either on the auxiliary or on the NRP itself (e.g. Gajewski 2007; Xiang 2015), as in (24).

- (24) a. John DOESn’t believe that God exists.  
 b. John doesn’t BELIEVE that God exists.

Assuming Romoli (2013) for NR-readings, Xiang (2015) attempts to provide an account for the cases in (24) that directly relates the absence of NR to focus marking on the negation and the NRP. Couching her account in the Optimality Theory framework, she assumes, that features, +σ borne by alternative triggers and +F borne by focussed elements, must each be checked via Agree with an exhaustifier, EXH. She also assumes the conditions and constraints in (25):

- (25) a. Two conditions on well formedness:  
 (i) Avoid unchecked features and syntactically vacuous EXH-operators.  
 (ii) Avoid G-triviality.  
 b. Two ranked constraints:  
 c. ExclF: there must be some excludable F-alternative.  
 d. MaxStrength: do not exhsustify S in [<sub>S'</sub>...S...] if it leads to a reading that is weaker or equivalent to S'.  
 (Xiang 2015:495)

The result is that for each of the sentences in (24), as well as sentences such as (8-a), a different derivation wins out as the optimal one. Note that both sentences where NR-readings are absent involve an EXH taking narrow scope with respect to negation, which, as desired, forces the evaluation of the scalar alternatives at a time when the scalar item is in an Upward Entailing environment.

- (26) a. John doesn’t believe p.  
 (i) LF:[EXH[¬[B<sub>j</sub>{+σ}p]]]

- (ii) \*LF:[ $\neg$  [EXH[B<sub>j</sub>{+ $\sigma$ }p]]] (\*due to (25-d))
- (iii) \*LF:[EXH [ $\neg$ [EXH[B<sub>j</sub>{+ $\sigma$ }p]]]] (\*due to (25-a-i))
- b. John DOESn't believe p.
  - (i) \*LF:[EXH[ $\neg$ {+F} [B<sub>j</sub>{+ $\sigma$ }p]]] (\*due to (25-a-ii))
  - (ii) \*LF:[ $\neg$ {+F} [EXH[B<sub>j</sub>{+ $\sigma$ }p]]] (\*due to (25-a-i))
  - (iii) LF:[EXH[ $\neg$ {+F} [EXH[B<sub>j</sub>{+ $\sigma$ }p]]]]
- c. John doesn't BELIEVE p.
  - (i) \*LF:[EXH[ $\neg$ [B<sub>j</sub>{+ $\sigma$ , +F}p]]] (\*due to (25-c))
  - (ii) LF:[ $\neg$ [EXH[B<sub>j</sub>{+ $\sigma$ , +F}p]]]
  - (iii) \*LF:[EXH[ $\neg$ [EXH[B<sub>j</sub>{+ $\sigma$ , +F}p]]]] (\*due to (25-a-i))

One empirical issue that arises in this system has to do with the derivation of (24-b).<sup>8</sup> In (25-c), Xiang (2015) stipulates that all focus elements must have excludable alternatives. Hence a derivation with global exhaustification is excluded for (27) because the alternative 'Bill doesn't know p' is weaker than 'Bill doesn't believe p', i.e. the NRP is F-marked but has no excludable alternatives.

(27) Bill doesn't BELIEVE it is raining, he KNOWS it is raining. (Xiang 2015:500)

An embedded EXH forces the F-marked element to be exhaustified in an Upward Entailing environment, where 'Bill knows p' is stronger than 'Bill believes p' and thus satisfies the requirement that F-marked elements must have excludable alternatives. However, this predicts that alternatives that are not stronger than 'believe', e.g. 'say', as in (28), will satisfy ExclF with global exhaustification as well as with local exhaustification. Now (25-d) will force global exhaustification, and, counterfactually, preclude the absence of NR-readings.

(28) Bill doesn't BELIEVE that it is raining, (though) he SAYS it is raining.

But there is another empirical issue brought to light by the Greek facts reviewed here. Xiang (2015) holds that the fact that the NRP or the negation bear focus marking directly influences the presence or absence of NR-readings. This leads us to not expect any sentences where negation or the NRP is focussed to allow for NR-readings. However, we have already seen that for post-verbal subjects, it is not the mere fact that these subjects are focussed that the presence or absence of NR will depend on, but the scope position of the  $\sim$  the focussed subject associates with. And this is also true for the cases where the focussed element is the NRP. As can be seen in (29), a focussed NRP in Greek can be focussed with a rising intonation or with a falling intonation, the two cases correlating with whether or not NR is available.

- (29) a. en **PIST**  $\nearrow$  **EFKO** oti en eksipnos (, ennen oti en tu LAL  $\searrow$  O oti eni)  
 NEG believe that is smart (, NEG-is that NEG him say that is )
- (i) ✗It's not the case that 'BELIEVE' is the relation that I bear wrt him being smart.'  
 [NEG[FOC[NRP]]]
  - (ii) ✓'BELIEVE' is the relation that I don't bear wrt him being smart.'  
 [FOC[NRP[NEG]]]

<sup>8</sup>I thank Yimei Xiang for discussion over this point.

- b. en **PIST** \ **EFKO** oti en eksipnos (, apla LAL / O oti eni)  
 NEG believe that is smart (, just say that is )
- (i) ✓ It's not the case that 'BELIEVE' is the relation that I bear wrt him being smart.  
 [NEG[FOC[NRP]]]
- (ii) ✗ 'BELIEVE' is the relation that I don't bear wrt him being smart.  
 [FOC[NRP[NEG]]]

It therefore does not suffice that the NRP be focussed to block NR; what is crucial is that the  $\sim$  that it associates with scopes between negation and the NRP. Under the approach taken here, this is exactly what we predict. Take the case of (24-b). When the NRP is focussed and the  $\sim$  it associates with scopes between negation and the NRP, we get alternatives of the type 'John  $R$  p', where  $R$  is a relation. Once  $\sim$  applies, any scalar (and focus) alternatives are reset, and EXH has nothing to evaluate.

- (30) **PF:** John doesn't BELIEVE p.  
**LF:** [EXH[ $\neg$ [ $\sim$ C [B<sub>F</sub>p]]]]  
**Evoked F-alternatives:** {  $\lambda w. R_j p$  in  $w : R \in R$  }  
**S-alternatives visible to EXH:** {  $\neg B_j p$  }  
**Exhaustification:**  $\neg B_j p$   
**Interpretation:** 'It's not the case that 'BELIEVE' is the relation that John bears wrt p.'

This also allows us to do away with Xiang's first problem, since we don't need to assume that focussed elements must have excludable alternatives to motivate local evaluation of the scalar alternatives. This is because the  $\sim$  will apply and reset the scalar alternatives in its scope, regardless of what these are. Now take (24-a). I suggest that we can also capture the lack of NR in these cases, if we assume that these constructions constitute negations of sentences such as the one in (31-a). Notice that both (31-a) and (24-a) evoke the same alternatives, namely the set of truth values for 'John believes p'. The derivations of these sentences are predicted to proceed as in (31-b) and (32) respectively. Crucially, by the time negation and EXH enter the picture, the scalar value of the NRP is no longer accessible.

- (31) a. John DOES believe p.  
 b. **PF:** John DOES believe p.  
**LF:** [EXH[ $\sim$ C [B<sub>j</sub>p]<sub>F</sub>]]  
**Evoked F-alternatives:** {  $\lambda w. \text{John believes } p$  in  $w = t : t \in T$  }  
**S-alternatives visible to EXH:** { B<sub>j</sub>p }  
**Exhaustification:** B<sub>j</sub>p  
**Interpretation:** 'It IS the case that John believes p.'
- (32) **PF:** John DOESN't believe p.  
**LF:** [EXH[ $\neg$ [ $\sim$ C [B<sub>j</sub>p]<sub>F</sub>]]]  
**Evoked F-alternatives:** {  $\lambda w. \text{John believes } p$  in  $w = t : t \in T$  }  
**S-alternatives visible to EXH:** {  $\neg B_j p$  }  
**Exhaustification:**  $\neg B_j p$   
**Interpretation:** 'It ISN't the case that John believes p.'

## 5. Conclusion

I have shown that NR is subject to FIEs, just like wh-questions. I have also shown how the framework for dealing with FIEs in Beck (2006) can be used in combination with the theory of NR in Romoli (2013) to account for FIEs in NR, if we make one additional assumption, namely, that  $\sim$  does not only reset the focus value of its argument, as Beck assumes, but also its scalar value. This solution also provided a straightforward way of resolving the ‘optionality’ of NR, in terms of FIEs. Since the account argued for here takes NR to be a scalar implicature, the prediction is that scalar implicatures in general will be subject to FIEs. This prediction, as well as the reasons why  $\sim$  might reset scalar values, are currently being explored in ongoing work.

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# Licensing the correlative construction via the semantics of the demonstrative

Anne Beshears

While its syntactic features are well established, it is still unclear what it is about the demonstrative correlate that licenses the correlative construction in languages like Hindi. Previous research has argued that the correlative clause is adjoined to the main clause, either at the IP (Dayal 1996) or at the demonstrative phrase itself (Bhatt 2003). Following the work of Nunberg (1993) and Elbourne (2008) on the semantic contribution of indexicals, I propose that it is the indexical nature of the demonstrative itself which allows the correlative clause to enter the syntax; the correlative clause is an overt pronunciation of the index, and therefore an argument, of the demonstrative.

## 1. Introduction

### 1.1. The correlative cross-linguistically

The correlative is one of several relativization structures available cross-linguistically. It is largely characterized as a relativizing clause which appears at the left periphery of the main clause and which is linked with the main clause through a nominal correlate, an associated demonstrative phrase which it may or may not be adjacent to.

Nearly all modern Indo-European languages have correlative constructions,<sup>1</sup> and the correlative is well documented in the ancient Indo-European (IE) languages, Modern Indo-Aryan (MIA), and Slavic languages (Lipták 2009; Bhatt 2003). There are a few non-Indo-European languages which also have correlatives such as Bambara, Basque, Hungarian, and arguably Tibetan Cable (2009). Several Dravidian languages have correlative constructions, as does Burushaski (an isolate spoken in northern India), arguably due to contact with Indo-Aryan languages. (Bhatt 2003:485; de Vries 2005:134; Lipták 2009:10)

Following are some examples of some typical correlative constructions<sup>2</sup>, where the relativiz-

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<sup>1</sup>Exceptions as noted by Bhatt (2003:488) include Southern Konkani, Saurashtri, and Sinhalese.

<sup>2</sup> Unless noted otherwise, Hindi data comes from my own fieldwork in Nizamuddin, New Delhi, India. Most examples from other sources have been rechecked with my language consultants as well.

ing clause is marked with brackets.

- (1) a. [ jo ləɾki kʰeɾi hɛ ] vo ləmbi hɛ [Hindi]  
 which girl.fs standing.fs be.pres.3s that tall.fs be.pres.3s  
 'Which girl is standing, that/she is tall' <sup>3</sup> (from Dayal 1996:152)
- b. [ je meye -Ti dariyaganj -e thake ] [Bangla]  
 which girl -cl Daryaganj.name -loc stays  
 Se khub bhalo gan gay  
 pro.3s very good sings song  
 'Which girl stays in Daryaganj, she sings very well.' (from Ishani Guha, p.c.)
- c. [ Wie jij uitgenodigd hebt ] die wilik niet meer zien [Dutch]  
 who you invited have that.one want I no longer  
 'Who you've invited, I no longer want to see him.' (from Izvorski 1996:5)
- d. [ Musa ye uru min san ] n ye o ye [Bambara]  
 Musa perf knife rel buy 1s perf it see  
 'Which knife Musa bought, I saw it.' (from Zribi-Hertz & Hanne 1995, cited by Rebuschi 1999:82)

In this paper, I will focus on the correlative construction in Hindi, but as correlatives have largely the same syntactic characteristics cross-linguistically, the analysis presented here should extend to correlatives in other language as well.

## 1.2. Looking ahead

One of the defining features of the correlative construction is the demonstrative requirement, or the necessity of a demonstrative (or pronoun) to mark the associated noun phrase in the main clause. While the syntactic features of the correlative construction are well established, it is still not clear what the relationship between the demonstrative and the correlative clause is. In this paper, I will argue that it is the underlying structure and semantic composition of the demonstrative phrase which is the key to the availability of the correlative construction. Specifically, the correlative clause itself is an overt pronunciation of the index of the demonstrative. This not only yields the right semantic contribution for the correlative construction, but also shows how the relative phrase and the demonstrative phrase may be independently headed and have independent case marking.

While there are other types of correlative constructions, including degree correlatives and multiple headed correlative constructions, in this paper I will focus on the single headed correlative which has only one relative pronoun.

In Section 2, I briefly outline the syntactic features of the correlative construction and define the terminology I will be using in this paper. In Section 3, I show how a semantic analysis of the demonstrative reveals the internal structure of the demonstrative phrase. I then argue that the correlative clause is an overt pronunciation of the index of the demonstrative. Section 4 concludes the analysis.



in the following example, the nominal is often called the *head* or *external head* of the relative clause.

- (4) va tʰori [ jəko (\*tʰori) u:bi hɛ ] dɪgi: hɛ [Marwari]  
 that.fs girl who girl standing.fs be.pres.3s tall.fs be.pres.3s  
 'That girl who is standing is tall.'

In the case of the correlative construction, referring to the head can be ambiguous. For this reason, I will refer to the nominal that appears in the main clause as part of the correlate phrase as the head<sub>MC</sub> and the nominal which appears in the relative phrase as the head<sub>RC</sub>.

## 2.2. Defining features of the correlative construction

Identifying correlatives has historically been highly descriptive, and under many early analyses, the correlative construction was assumed to be a variation of the postnominal relative clause construction. Dayal (in Srivastav 1991 and Dayal 1996) showed that correlatives are a separate construction, pointing to several features which distinguish them from other relativizing structures (adapted from Lipták 2009).

(5) Typical features of a correlative construction:

- Occur at the left periphery of the main clause.
- Headed by a relative pronoun (*wh<sub>RC</sub>*) or relative phrase.
- The relativized nominal may appear in both the relative clause and the correlative (what Dayal 1996 refers to as *headedness*).
- There must be a correlate, either a demonstrative or a pronominal, in the main clause (*the demonstrative requirement*)
- Correlatives license multi-headed relative clauses.

The correlative construction is often discussed in contrast with the postnominal relative clause (sometimes called the restrictive relative clause), which follows the associated noun and has the semantics of a modifier (example 6).

- (6) ø/ek/koi/vo ləʈki [ jo kʰeʈi hɛ ] ləmbi hɛ [Hindi]  
 a/one/some/that girl.fs which standing.fs be.pres.3s tall.fs be.pres.3s  
 'A/one/some/that girl who is standing is tall.'

Postnominal relative clauses differ from correlatives in that (i) they are not fronted but follow the relativized nominal, (ii) they are not subject to the demonstrative requirement, (iii) they cannot be internally headed, (iv) they may be indefinite, and (v) they do not license multi-headed relative clauses (Dayal 1996, Ch. 5-6).

### 2.2.1. The Demonstrative Requirement

One of the defining features of the correlative is the necessity of a corresponding correlate in the main clause. Cross-linguistically, the *correlate* may either be a demonstrative or a pronoun, i.e., an indexical. The correlate marks the relativized noun, what de Vries (2005:144) calls the *pivot* noun, or noun in the main clause which is the linking point between the two clauses.

The demonstrative correlate in Hindi is required and cannot be deleted, as illustrated in (7), where *ve* ‘that.pl’ is the demonstrative correlate.

- (7) [ jo laṛkiyā kʰaṛi hẽ ] \*(ve) do (laṛkiyā) lāmbi hẽ [Hindi]  
 which girl.fp standing.fp be.pres.3p those two girl.fp tall.fp be.pres.3p  
 ‘Which girls are standing, \*(those) two are tall.’ (from Dayal 1996:160)

This non-optionality of the demonstrative correlate in Hindi may be called the *demonstrative requirement* (Dayal 1996:160).<sup>4</sup>

#### (8) The Demonstrative Requirement

The correlate (phrase) in the main clause, at the modified NP, must include an overt demonstrative (adapted from Dayal 1996).

Some languages may allow the option of either a pronominal or a demonstrative correlate. For example, in Bangla the correlate may either be a pronoun or demonstrative, with a strong preference for the pronominal correlate. (See Bagchi 1994 for more information on the pragmatic restrictions on the correlate in Bangla.)

In conclusion, the *demonstrative requirement* reflects the fact that Hindi requires a demonstrative or demonstrative phrase to mark the associated argument in the main clause. Other languages allow the correlate to be pronominal or may even allow some optionality between a pronoun and a demonstrative, as is seen in Bangla.

### 2.2.2. Dual Headedness

Unlike postnominal relatives, correlatives allow the associated nominal to surface in the correlative clause and/or the main clause. For example, in the following, the nominal *laṛki* ‘girl’ may appear in the correlative *wh<sub>RC</sub>*-phrase, in the associated demonstrative phrase, or both.

<sup>4</sup>There is a class of exceptions to the demonstrative requirement. These are the universals *səb/donō/tinō...* ‘all, both, all three, etc.’ and the single determiner *har ek* ‘each/every one’. In these cases, the demonstrative is not required.

- (i) [ jo laṛkiyā kʰaṛi hẽ ] səb/donō/tinō lāmbi hẽ [Hindi]  
 which girl.fp standing.fp be.pres.3p all/both/all-three tall.fp pres.fp  
 ‘Which girls are standing, all/both/all three are tall.’ (from Dayal 1996:162, ex. 13a.)

Because the universals could also be found with an overt demonstrative, Dayal (1996:162) suggests that perhaps these include a null demonstrative. For now, I will assume that this is the case, although this is something which warrants further investigation.

- (9) [ jo (ləɾki) kʰəɾi hɛ ] vo (ləɾki) ləmbi hɛ [Hindi]  
 which girl.fs standing.fs be.pres.3s that girl.fs tall.fs be.pres  
 'Which girl is standing, that (girl) is tall.'

A postnominal relative, on the other hand, cannot be headed inside of the relative clause.

- (10) vo ləɾki [ jo (\*ləɾki) kʰəɾi hɛ ] ləmbi hɛ [Hindi]  
 that girl.fs who girl standing.fs be.pres tall.fs be.pres  
 'The girl who (\*girl) is standing is tall.'

Dayal (1996:159) refers to the overt pronunciation of the nominal within a clause as *headedness*, defining it as the presence or absence of the common noun in the relative clause and/or the matrix clause. For now, I will use the term headedness in the same way while stipulating that this is an entirely descriptive term without making any implied theoretical stance at this point. I will, however, revisit what it means for the correlative to be headed in this way in my later analysis.

There are differing analyses as to how the nominal may appear in both the correlative clause and the main clause. Some authors refer to one or the other noun as a 'copy', without always making it clear which noun is a copy of the other (de Vries 2005:144). Other authors argue for deletion of (Koul 2009:187) or non-realization of (Kachru 2008:220,222) one of the nouns. Yet others refer to restrictions on spell-out (Lipták 2009:3; Mahajan 2000:220) where one or the other (or both) instance of the nominal may be overtly pronounced.

Many of these analyses of the correlative construction assume that the noun in the relative phrase and the noun in the demonstrative phrase must be the same. This is not actually the case. In my own field work, I found that the noun phrases in the two clauses may be quite independent. (McCawley 2004 also noted that the two clauses may have independent noun heads, and Dayal 1996 includes a few examples as well).

Example (11) shows that the two phrases may be headed by an different noun entirely as long as both nouns refer to the same semantic entity.

- (11) [ jis adʰiːʋapək ne us- ki klas ko tʃaklet di ] [Hindi]  
 which.s.obl teacher.fs erg that.obl of.fs class.ms.obl acc candy.f give.perf.f  
 vo arət səb- se atʃʰ:i adʰiːʋapək hɛ  
 that woman all- from good.fs teacher.fs be.pres.3s  
 'Which teacher gave her class candy, that woman is the best teacher.'

The head<sub>RC</sub> and head<sub>MC</sub> may also have their own modifying adjectives and adverbs (example 12),<sup>5</sup> indicating that they are independently constructed noun phrases.

<sup>5</sup>In this example, *zordar* literally means 'forceful' but has an idiomatic meaning of 'loud.' Some speakers do not accept *zordar* as a modifier and prefer *uncha swar wali aurat* which doesn't translate directly to English but which means roughly 'woman who speaks with a loud voice'.



- (14) ram [jo si.di sel pər hɛ] us si.di ko k<sup>h</sup>aridega [Hindi]  
 Raam which CD sale on be.pres.3s that.obl CD acc buy.fut.3ms  
 'Raam will buy which CD is on sale, that CD.' (adapted from Bhatt 2003:490)

For example, in (14) we see that the correlative *jo sidi sel pər hɛ* 'which CD is on sale' surfaces inside of the main clause, following the main clause subject, at the demonstrative phrase *us sidi ko* 'that CD'.

The correlative may also optionally be fronted (example (15)), and therefore separated from the associated demonstrative phrase (*us si.di ko* 'that CD') in the surface word order.

- (15) [jo si.di sel pər hɛ] ram us si.di ko k<sup>h</sup>aridega [Hindi]  
 which CD sale on be.pres.3s Raam that.obl CD acc buy.fut.3ms  
 'Which CD is on sale, Raam will buy that CD.'

The possibility that the correlative may be within the main clause and does not necessarily have to be fronted leads to questions about the underlying structure of the correlative clause. In the next section, I will summarize two possible analyses for the base position of the correlative construction. The first assumes that there are multiple merger sites for the correlative (Dayal 1996), while the second analyses argues that the non-fronted correlative is actually the underlying base position, and it is the fronted correlative which is marked (Bhatt 2003).

#### 2.4. Syntax and semantics of correlatives: Recent analyses

There have been two main approaches to analyzing the two relative clause types in Hindi which are headed by relative pronouns – the correlative construction and the postnominal relative clause. Many earlier papers treated correlatives as a variation of the postnominal relative clause with different accounts for how the correlative had been fronted. This includes papers like Kachru (1973), Kachru (1978), Subbarao (1984), and Wali (1982), among others.

- (16) A Hindi Correlative Construction:  
 [jo ləɽki k<sup>h</sup>ɛɽi hɛ] ʋo ləmbi hɛ [Hindi]  
 which girl.fs standing.fs be.pres.3s that tall.fs be.pres.3s  
 'Which girl is standing, that/she is tall'

- (17) A Hindi Postnominal Relative Clause Construction:  
 ø/ek/ʋo ləɽki [jo (\*ləɽki) k<sup>h</sup>ɛɽi hɛ] ləmbi hɛ [Hindi]  
 a/one/that girl.fs which girl.fs standing.fs be.pres.3s tall.fs be.pres.3s  
 'A/one/that girl who is standing is tall.'

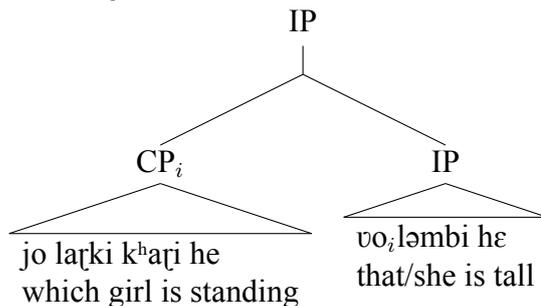
Because the correlative was considered a variation on the postnominal relative construction, the term has been used in various ways depending on the analysis. 'Correlative' was not always restricted to relatives at the left periphery – the term could refer to any relativization phrase which was displaced from the associated noun phrase, including both fronted and extraposed relatives (i.e., occurring at the left or right peripheries respectively) (Izvorski 1996).

While earlier papers (Downing 1973; Keenan 1985; Andrews 1985) had noted that there were syntactic differences between correlative constructions and the postnominal relative clause, Dayal (in Srivastav 1991 and Dayal 1996) was instrumental in defining the syntactic features of the correlative that distinguish it from other relativization structures showing that correlatives in Hindi, and by extension other MIA languages, are a distinct construction from the postnominal relative clause. Most recent analyses of correlatives follow Dayal in assuming that the correlative is an independent relativizing structure with syntactic and semantic features distinct from the postnominal relative (including, but not limited to, Grosu & Landman 1998; de Vries 2001, de Vries 2005; Bianchi 2002a, Bianchi 2002b; Bhatt 2003; Bhatt & Lipták 2009; Lipták 2009).

2.4.1. *The correlative is base-generated at the IP/TP (Dayal 1996)*

Having established that the correlative is a distinct construction from the postnominal relative clause, Dayal (1996:168) argues that the correlative clause is not base-generated after the head noun but is adjoined at the left periphery. She proposes the following syntactic structure. The correlative is merged directly at IP/TP and, importantly, has not undergone any movement.<sup>7</sup>

(18) Left-Adjoined Hindi Correlative:

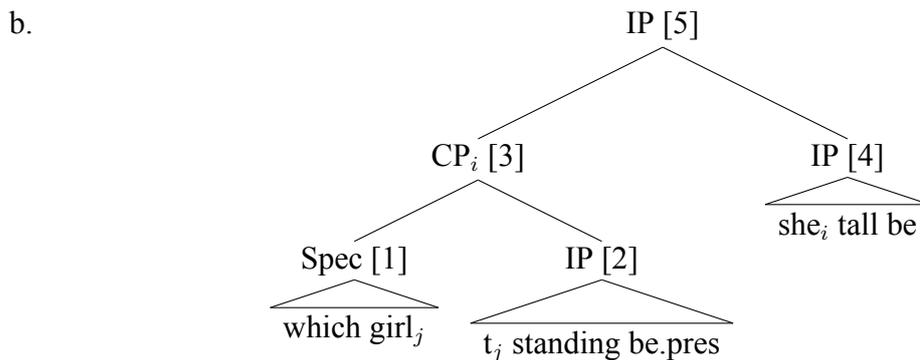


Semantically, Dayal analyzes the correlative clause as a generalized, universal quantifier which binds a variable in the main clause, namely the demonstrative. The correlative CP itself is adjoined at IP, in the same position as the position where other quantifier phrases, having undergone quantifier raising (QR) at LF, are interpreted. The correlative differs from other quantifier phrases, though, in that ‘its first argument is the intersection of two sets rather than one basic set’ (Dayal 1996:191). A sentence like *jo laṛki kʰaṛi he, vo laṛki laṁbi he* ‘which girl is standing, that girl is tall’ would accordingly have the following structure (example 19b).<sup>8</sup>

- (19) a. [<sub>CP</sub> [<sub>RelP</sub> jo laṛki ]<sub>j</sub> t<sub>j</sub> kʰaṛi he ]<sub>i</sub> vo<sub>i</sub> laṛki laṁbi he [Hindi]  
 which girl standing be.pres that girl tall be.pres  
 ‘Which girl is standing, that girl is tall.’

<sup>7</sup>Dayal (1996) notes that there are cases where the correlative clause is pronounced at the demonstrative itself and allows for the possibility that the correlative may, optionally, be adjoined at the demonstrative.

<sup>8</sup>In Dayal’s notation, all of the indexes *i* indicate that they refer to the same girl. For clarity, I have used *j* to indicate that the relative phrase has been moved from the position of the trace *t<sub>j</sub>*, whereas the index *i* indicates a quantifier-variable relationship, without movement, between the correlative CP and the demonstrative.



While analyzing the correlative-correlate relationship as that of an operator-variable does seem to give us a simple explanation for the distribution of internal heads and for the demonstrative requirement, several of the crucial assumptions behind this analysis may not actually hold true.

First, Dayal assumes that a correlative quantifier may be raised at IP. For the most part, in all other cases QR is a purely semantic operation, applying at LF and never affecting the pronunciation. It is surprising for a quantifier to be syntactically base-generated at this position. If this is the case, what is it about the correlative clause which allows this?

Second, as we will see in the next section, Bhatt (2003) shows that the correlative is not only allowed but must be pronounced at the demonstrative phrase. Under this analysis, the correlative clause is base-generated at the demonstrative itself and that the correlative and demonstrative are part of the same constituent.

Under Dayal's analysis, the relationship between the correlative clause and the demonstrative relies on the fact that the demonstrative is an indexical. While there are arguments against the correlative being base-generated at IP, I will return to this idea of the demonstrative's indexicality being central to the correlative-correlate construction and show that, though the relationship between them is not an operator-variable relationship, it is the indexicality of the demonstrative itself which is the key to the correlative construction.

#### 2.4.2. *The correlative is base-generated at the DemP (Bhatt 2003)*

While Dayal (in Dayal 1996 and Srivastav 1991) showed that the correlative is a distinct construction from the postnominal relative clause, does this necessarily mean that a fronted correlative has not undergone movement at all? Bhatt (2003) revisits this question, and argues that the correlative clause in Hindi and across Modern Indo-Aryan originates at the demonstrative phrase (DemP) itself. It may then be raised to a fronted position at the left periphery.

Bhatt argues that the largely overlooked word order in which the correlative is at the demonstrative phrase, such as in (20),<sup>9</sup> is the underlying construction for all correlatives.

- (20) ram [[ jo si.di sel pər hɛ ] [us si.di ko ] ] kʰaridega [Hindi]  
 Raam which CD sale on be.pres.3s that.obl CD acc  
 'Raam will buy which CD is on sale, that CD.' (adapted from Bhatt 2003:495)

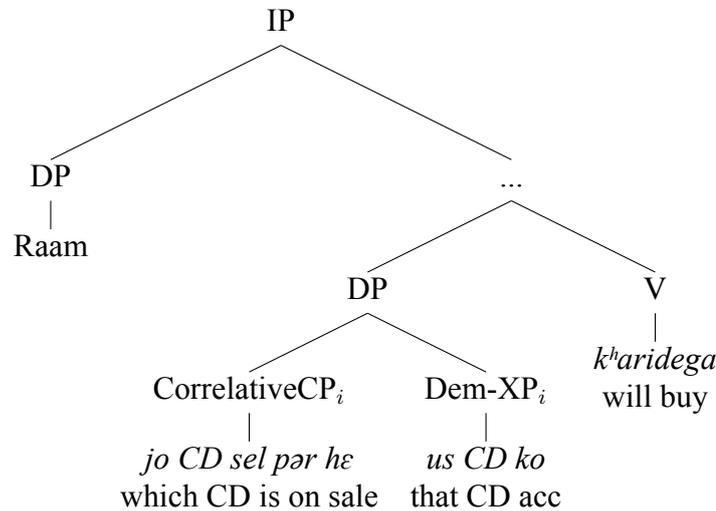
Bhatt (2003) concludes that the correlative cannot enter the syntax at the IP itself but must be adjoined at the demonstrative phrase and may only then be fronted. The correlative construction,

<sup>9</sup>My consultant preferred: *jo sel me hɛ*, literally 'which (ones) are in sale.'

therefore, has the structure in (21), in which the correlative CP and the DemP are base-generated within the same constituent.

(21) a. [ [ RC ] [ *DemP* Dem NP ] ]

b.



Here, the indices indicate that the correlative is coindexed with or associated with the Dem-XP and does not imply movement.

There are several arguments to show that the correlative clause has undergone movement and that it is part of the same constituent as the demonstrative. First, the correlative is subject to island effects. This shows that a fronted correlative must have undergone movement, and that the correlative-correlate relationship is not the same as in variable binding. Finite clauses are islands for covert movement in Hindi, but they are not islands for overt movement, as shown in example (22a). Similarly, a fronted correlative may occur even when the associated demonstrative is inside of a finite clause (example 22).

(22) a. ram sita janti hε [ ki puja ko t<sub>i</sub> pəsand hε ] [Hindi]

Raam Sita know.impfct.fs pres.3s compl Pooja dat liking be.pres.3s

'Raam, Sita knows that Pooja likes t<sub>i</sub>.'

b. [ jo ləɽki ti.vi pər ga rəhi hε ]<sub>i</sub> [Hindi]

which girl.fs TV.obl.f on sing prog.fs pres.3s

sita soc<sup>h</sup>ti hε ki [ t<sub>i</sub> vɔ ] sūndər hε

Sita think.impfct.fs pres compl that beautiful/pretty be.pres.fs

'Which girl is singing on TV, Sita thinks that that/she is beautiful.'

'Sita thinks that the girl who is singing on TV is beautiful.' (from Bhatt 2003:500)

Movement out of a relative clause island, on the other hand, is prohibited in Hindi. While Hindi quite freely allows scrambling or the fronting of an phrase to mark topicality or focus, an argument cannot be fronted from within a relative clause island. For example, the argument *arund<sup>h</sup>ati<sub>i</sub> ne* 'Arundhati erg' cannot be moved from within the postnominal relative clause to a fronted position. Correspondingly, a fronted correlative clause cannot be associated with a demonstrative phrase inside of a relative clause island (example 23).

- (23) \* arund<sup>h</sup>ati<sub>i</sub> ne muj<sup>h</sup>- ko [ vo kəhani jo t<sub>i</sub> lik<sup>h</sup>i ] [Hindi]  
 Arundhati erg I.obl dat that story.fs which write.perf.fs  
 pəsənd he  
 liking be.pres.3s  
 'Arundhati, I like that story which ((s)he/t<sub>i</sub>) wrote.' (from Bhatt 2003:503:503)

The inability of the correlative to be associated with the demonstrative is an indication that the correlative has been moved from within the relative clause island, which is prohibited.

One argument against concluding that correlative clause has undergone movement and that the correlative and demonstrative are part of the same constituent might be that the island also blocks the binding of a variable, in which case we would expect to see the same kind of island effects in variable binding. Instead, we find that variable binding does not display island effects, as illustrated in (24).

- (24) hər ləɽke<sub>i</sub> ko [ vo kəhani [ jo arund<sup>h</sup>ati ne us<sub>i</sub>- ke bare mē lik<sup>h</sup>i ] ] [Hindi]  
 each boy.obl.ms dat  
 that story which Arundhati erg that about write.perf.fs  
 pəsənd he  
 liking be.pres.3s  
 'Each boy<sub>i</sub> likes the story which Arundhati wrote about him<sub>i</sub>.' (from Bhatt 2003:500)

From these island effects, Bhatt (2003) draws two conclusions. First, because correlatives display sensitivity to island effects, a fronted correlative must have undergone movement. Further, as the demonstrative phrase does not move overtly, it must be the correlative which has moved and is thereby triggering the island effects that we see in these examples. The difference between the island effects seen in correlatives versus variable binding indicates that 'the relationship between the Correlative clause and the Demonstrative cannot just be variable binding' (Bhatt2003:501).

Not only do we have evidence that movement of the correlative is blocked by island effects, the demonstrative phrase and the correlate are part of the same constituent. One evidence for this is the Coordinate Structure Constraint (Ross 1967:161).

- (25) The Coordinate Structure Constraint (CSC)  
 In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct.

It is possible for two demonstrative phrases in Hindi, both of which are associated with a correlative, to be coordinated (Bhatt 2003:504), as shown in example (26).

- (26) rahul aj.kəl [[jo kitab sera ne lɪkʰi hɛ] ʋo] ɔɾ [Hindi]  
 Rahul nowadays which book Sera erg write.perf.fs pres.3s that and  
 [[jo kartun ʃyam ne bənaya] ʋo] pəɽʰ rəha hɛ  
 which cartoon/comic.ms Shyam erg made.perf.ms that read prog.ms pres  
 'Rahul nowadays is reading which book Sarah wrote, that, and which comic Shyam made,  
 that.'  
*Roughly:* 'Nowadays, Rahul is reading the book that Sarah wrote and the comic that  
 Shyam made.' (from Bhatt 2003:504)

The CSC dictates that, where two correlativized NPs are coordinated, movement from within the coordinated structure is blocked. If the correlative is base-generated at the IP, this predicts that there is no restriction on a fronted correlative being associated with a NP inside of a coordinate structure. The CSC, on the other hand, would restrict a constituent of the DemP from being extracted. This is indeed the case; neither of the correlatives may be extracted from the correlative phrase (Bhatt 2003).

- (27) \*[jo kitab sera ne lɪkʰi hɛ] rahul aj.kəl [Hindi]  
 which book Sera erg write.perf.fs pres.3s Rahul nowadays  
 [[t<sub>i</sub> ʋo] ɔɾ [[jo kartun ʃyam ne bənaya] ʋo]]  
 that and.conj which comic.ms Shyam erg made.perf.ms that  
 pəɽʰ rəha hɛ  
 read prog.ms pres  
*Intended:* 'Which book Sarah wrote, nowadays, Rahul is reading that, and which comic  
 Shyam made, that.'

As additional evidence, Bhatt shows that the correlative clause reconstructs to the correlative-demonstrative phrase at LF. First, the correlative shows condition C effects: 'if a pronoun c-commands the demonstrative phrase associated with a Correlative clause, then the pronoun cannot corefer with a name contained inside that Correlative clause' (Bhatt 2003:512). That is, if the correlative associated with an object demonstrative base-generated at the fronted position, it would have the structure in (28).

- (28)
-

Given this structure, a demonstrative in the subject position should be able to freely corefer with a name inside of the correlative clause where the correlative clause itself is associated with the object DemP (indicated by the indexes *i* and *j* respectively).

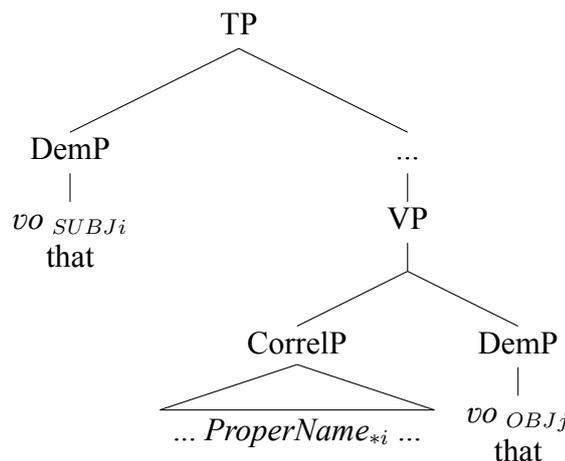
This does not prove to be the case, as we can see in (29).

- (29) \* [jo ləɽki sita<sub>i</sub> ko piʋar karti hɛ ]<sub>j</sub> us<sub>i</sub> ne [Hindi]  
 which girl Sita acc love do.impfct.fs pres.3s that.obl erg  
 us<sub>j</sub> ko tʰukra diya  
 that.erg acc rejection.ms give.perf.ms  
 '[ Which girl loves Sita<sub>i</sub> ]<sub>j</sub>, she<sub>i</sub> rejected her<sub>j</sub>.' (from Bhatt 2003:513)

This should have a reading of *Which girl loves Sita, Sita rejected that girl*. Instead, that reading is unavailable and is a violation of Condition C.

On the other hand, if the correlative is base-generated at the demonstrative correlate, lower than the subject, then it follows that a proper name in the correlative should not be able to corefer with a demonstrative in the subject position. This proves to be the case.

(30)



Variable binding also shows similar reconstruction effects (Bhatt 2003:514-515). Cross-linguistically, a quantifier can only bind a pronoun that it overtly c-commands.

- (31) a. Every boy<sub>i</sub> loves his mother<sub>i</sub>.  
 b. \*His mother<sub>i</sub> loves every boy<sub>i</sub>.

There is a small class of exceptions to this, which is the raising verbs. In these cases, we can assume that a raised subject is interpreted at its trace at LF and that, at LF, the pronoun is c-commanded by the embedded subject.

- (32) [ His<sub>i</sub> father ]<sub>j</sub> seems to every boy<sub>i</sub> [ t<sub>j</sub> to be a genius ].

We find a similar pattern in Hindi correlative constructions in which the quantifier does precede the pronoun that it binds in the overt pronunciation.

- (33) [ j<sub>is</sub> ləʔke ko vo<sub>i</sub> pasand karti hɛ ]<sub>j</sub> hər ləʔki<sub>i</sub>  
 which boy.erg.ms acc that liking do.impfct.fs pres.3s each girl.fs  
 [ t<sub>j</sub> [ us ləʔke ko ]<sub>j</sub> ] bud<sup>h</sup>:iman səməj<sup>h</sup>ti hɛ  
 that.obl boy.ms acc intelligent consider.impfct.fs pres.3s  
 ' [ Which boy likes that/her<sub>i</sub> ]<sub>j</sub>, every girl<sub>i</sub> considers that boy<sub>j</sub> (to be) intelligent.'

Variable binding in sentences like these show that they have an underlying structure like the following.

- (34) Each girl considers [ [ which boy likes her ] [ that boy ] ] (to be) intelligent.

From the binding effects and the pattern seen in variable binding, Bhatt concludes that the correlative CP and the DemP are base-generated as part of the same constituent, with the correlative clause adjoined above the demonstrative phrase. The correlative clause may then undergo movement to a fronted position, but it is interpreted at its trace position at LF.

### 2.5. *Lingering questions*

Previous research shows that the correlative construction is a) a distinct construction from the postnominal relative, and b) is base-generated as part of the correlative-demonstrative constituent. These analyses, though, leave several open questions about the structure of the correlative.

Bhatt's argument that the correlative is merged at the demonstrative phrase is compelling, but it does not explain how the demonstrative licenses the correlative. If the relationship between them is not variable binding, then what is it?

It is also unclear what the syntactic relationship between the correlative and the correlate is. They seem to be intimately linked, so much so that the presence of the demonstrative licenses the correlative construction, yet none of the analyses so far can account for why this is the case. Bhatt's analysis goes as far as saying that they are within the same constituent, but there are several reasons why we don't want to say that the correlative is simply adjoined to the demonstrative phrase. There is no other phrase which can adjoin above a demonstrative phrase. What is it about the correlative that would allow it to adjoin to a demonstrative phrase but which would keep such a construction from over-generating?

In the next section, I propose that it is the semantics of the demonstrative itself which is the key to understanding how these structures are constructed.

## 3. *The correlative as an index of the demonstrative*

### 3.1. *Looking ahead*

Earlier research assumed that the correlative construction is simply a variant of the postnominal relative, but in the previous sections we have seen several arguments for analyzing these as distinct constructions (cf. Srivastav 1991, Dayal 1996). There are also strong arguments that the correlative clause is base-generated at the demonstrative phrase, despite the fact that it often surfaces in a fronted position (Bhatt 2003). So, syntactically, we know a great deal about how

the correlative construction is built, but there is still no clear motivation for the link between the correlative clause and the correlate.

I posit that, in order to understand more fully the relationship between the different components of the correlative construction, we must look to their semantic composition. In this spirit, I propose that it is the underlying structure and semantic composition of the demonstrative itself which allows the correlative clause to enter the syntax.

In Section 3.2, I summarize Elbourne (2008)'s analysis of the internal structure and semantic contribution of the demonstrative (following Nunberg 1993). In Section 3.3, I go on to show that the correlative is an overt pronunciation of the index of the demonstrative and to give in detail the semantic composition of the correlative-correlate constituent.

### 3.2. *The internal structure of the demonstrative*

The key to analyzing the correlative construction and to seeing how the different components of this construction come together lies in the underlying structure and semantic composition of the demonstrative itself; the internal structure of the demonstrative is revealed in part by its semantic contribution.

Nunberg (1993) argues that indexicals, or expressions which carry an index, are made up of four components: the classificatory component, the relational component, the deictic component which picks out an index, and the interpretation within the main clause. The *classificatory component* includes the phi-features (gender, number, person) and animacy features. The *deictic component* identifies the index by gesturing and, in the case of the demonstrative, giving information about proximity. The *relational component* is the contextually defined relationship between the index and its interpretation. The relationship itself is not defined within the syntax but is dependent on the pragmatic accessibility of the relation. '[M]ost of the work of specifying the interpretation is accomplished, rather than by the utterance, in a process mediated by the speaker's intention, the linguistic context, considerations of relevance and so on' (Nunberg 1993:17). Any logical relation is permissible, but some relations are more accessible than others – 'more salient, more reliable, more generally exploitable' (Nunberg 1993:31-31).

Elbourne (2008, building on Nunberg 1993) proposes the following internal structure for the demonstrative.

(35) [<sub>DemP</sub> [ [ that *i* ] R ] NP ]

Under this account, the *index i* or deictic component is a lexical item which identifies the referent. Like Nunberg's analysis, the relational variable R is a contextually defined relation between the index *i* and an individual *z*, where *z* is a member of the set of individuals which have the property denoted by NP. The classificatory information, including information about proximity, is carried by the demonstrative morpheme *this* or *that*.

In a situation like this where the speaker is pointing at a donkey and saying *that donkey*, it is difficult to see what each of the components of the demonstrative are contributing. Consider a case in which the referent is not part of the set picked out by the NP; in this type of example, the role of R is much more apparent. Imagine a situation in which there is a farm which has two donkeys, each living in a separate field (adapted from Elbourne 2008:431). The speaker is standing looking out over the two fields (Field A and Field B), where Field A is immediately

in front of the speaker and Field B is beyond it, at some distance from the speaker. The speaker can then say the following.

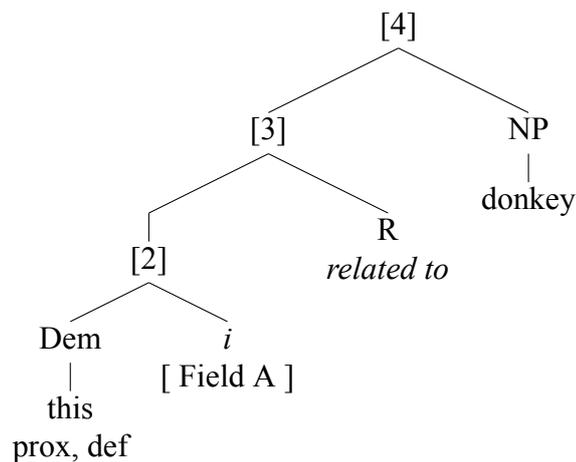
(36) This donkey [gesture at Field A] is healthier than that donkey [gesture at Field B].

Importantly, the speaker can make the above statement even if neither donkey is in their field at the time. Perhaps both donkeys are at the veterinarian. In this case, neither *this donkey* nor *that donkey* is actually present within the context. The index, therefore, cannot be picking out the donkey itself as an index. Instead, *this donkey* and *that donkey* are picking out Field A and Field B as their respective index, where Field A and Field B each represent their own respective donkey. ‘Field A is the index ... that brings to mind the donkey that resides in it.’ (Elbourne 2008:430).

At the time of the speech act, where neither donkey is actually in the referenced field, the sentence in (36) above means roughly: *The donkey who is represented by Field A is healthier than the donkey who is represented by Field B.*

Following Elbourne (2008), the demonstrative phrase *this donkey* has the following structure.

(37)



Before continuing, I am going to use a slightly modified version of Elbourne (2008)’s semantics. Because the semantics for the correlative will also include events, rather than using both events and situations, I will assume that events (e) are a subset of situations (s) or, more precisely, are event-defined situations and therefore of type  $\langle s \rangle$ . I am also suppressing the world parameter as modality will not be part of the current analysis, and all situations in the following examples can be assumed to be situated within the real world.

With these two modifications, the components of the demonstrative phrase have the following semantic contribution.

- (38) a.  $\llbracket \text{that} \rrbracket^{\text{h,a,t}} = \lambda x. \lambda f_{\langle e, \text{sest} \rangle}. \lambda g_{\langle se, st \rangle}. \lambda e_{\langle s \rangle}. \iota z (f(x)(\lambda e'_{\langle s \rangle}. z)(e) = 1 \ \& \ g(\lambda e'_{\langle s \rangle}. z)(e) = 1 \ \& \ \text{distal}(x, a, t))$
- b.  $\llbracket \text{this} \rrbracket^{\text{h,a,t}} = \lambda x. \lambda f_{\langle e, \text{sest} \rangle}. \lambda g_{\langle se, st \rangle}. \lambda e_{\langle s \rangle}. \iota z (f(x)(\lambda e'_{\langle s \rangle}. z)(e) = 1 \ \& \ g(\lambda e'_{\langle s \rangle}. z)(e) = 1 \ \& \ \text{distal}(x, a, t))$
- c.  $\llbracket \text{donkey} \rrbracket = \lambda u_{\langle s, e \rangle}. \lambda e_{\langle s \rangle}. u(e) \text{ is a donkey in } e \text{ (where } e \text{ is an event-defined situation)}$
- d.  $\llbracket R \rrbracket = \lambda y. \lambda x_{\langle s, e \rangle}. \lambda e_{\langle s \rangle}. x(e) = y$

## 3.3. The correlative as an overt index of the demonstrative

The necessity of a corresponding correlate in the main clause is a defining feature of the correlative construction cross-linguistically, and we know that the correlate must be either a demonstrative or a pronominal, both indexicals. What is it about the indexicality of the correlate which allows the correlative CP to enter the syntax?

I propose that the correlative clause enters the syntax as an overt pronunciation of the index of the demonstrative. Consider the following example, reflecting Bhatt's proposed constituent structure.

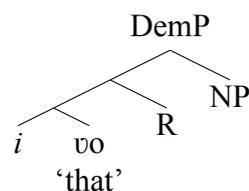
- (39) rohit [Cor [RelP jo kitab ] sera ne lk<sup>h</sup>i hε ] [Hindi]  
 Rohit.ms which book.fs Sera.fs erg write.perf.fs pres.3s  
 [DemP vo kitab ] pər<sup>h</sup> rəha hε  
 that.s book.fs read prog.ms pres.3s  
 'Rohit [ [ which book Sera has written ] [ that book ] ] is reading.'

The correlative construction may roughly be described as two sentences or clauses (Keenan 1985) where an argument defined by the correlative CP appears to also be participating in the event defined by the main clause. For example, in example (39) there is a book which Sera has written and this same book also participates in the event of Rohit reading.

This is exactly what a demonstrative does. It picks out a referent and allows that referent to participate in the event defined by the main clause through a relation R. This was true for Field A and the donkey. It is also true for the book which Sera wrote and the book which Raam is reading.

What is this going to look like? First, a simple mirroring of the demonstrative and the index gives us the proper Hindi word order for the demonstrative while retaining the appropriate hierarchal relations.<sup>10</sup>

- (40) a. [ [ [ i that ] R ] NP ]  
 b.



We can now update the constituent structure of the correlative-correlate constituent to reflect that the correlative is an overt pronunciation of the index of the demonstrative.

- (41) [DemP [ [ [Cor [RelP jo kitab ] sera ne lk<sup>h</sup>i hε ] vo ] R ] [NP kitab ] ] [H]  
 which book Sera erg wrote pres that R book  
 '... [ [ [ which book Sera has written ] that ] R ] book ] ...'

The correlative-correlate in example (41) should compose to mean something like: *There is a book which Sera wrote, and Raam is reading that book.*

<sup>10</sup>The shifting of the index *i* and the demonstrative is not only useful for my analysis but reflects that Hindi is right-headed and avoids a violation of the Final Over Final Constraint (FOFC).

For now, assume that the correlative contributes the following semantics. Note that I am using a simplified notation for tense and aspect, as it is not relevant to the current discussion which analysis of tense and aspect is used. Because there are two NP's *kitab* 'book', I have included a subscript to show which clause the NP is included within. I will call the semantic contribution of the correlative  $\llbracket \text{book} \rrbracket$  so that the following calculations are more transparent.

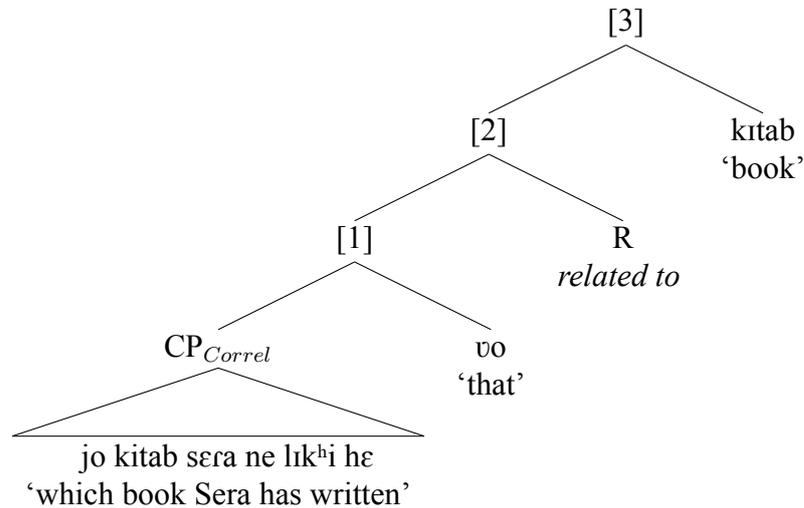
(42) Semantic composition of the correlative clause (preliminary)

$$\llbracket \text{which book Sera wrote} \rrbracket = \llbracket \text{book} \rrbracket = \\ \iota x. \exists e. x \text{ is a book}_{RC} \text{ in } e \wedge \text{write}(e) \wedge \text{agt}(e, \text{Sera}) \wedge \text{pt}(e, x) \wedge \text{perf}(e) \wedge \text{pres}(e)$$

The formalization in (42) can be read as: *The unique, presupposed  $x$  such that there is an event  $e$  and  $x$  is a book<sub>RC</sub> in  $e$  and  $e$  is a (present, perfect) writing event such that Sera is the agent of  $e$  and  $x$  is the patient of  $e$ .*

Turning to the demonstrative phrase, the semantic composition of the demonstrative and the components within it are the same as the demonstrative in a normal (i.e., non-relativizing) context, repeated below.

(43)



$$\llbracket \text{that} \rrbracket^{\text{h,a,t}} = \lambda x. \lambda f_{\langle e, \text{sest} \rangle}. \lambda g_{\langle \text{se}, \text{st} \rangle}. \lambda e_{\langle s \rangle}. \iota z (f(x)(\lambda e'_{\langle s \rangle}. z)(e) = 1 \ \& \ g(\lambda e'_{\langle s \rangle}. z)(e) = 1 \ \& \ \text{distal}(x, a, t))$$

$$\llbracket \text{book} \rrbracket = \lambda u_{\langle s, e \rangle}. \lambda e_{\langle s \rangle}. u(e) \text{ is a book in } e$$

$$\llbracket R \rrbracket = \lambda y. \lambda x_{\langle s, e \rangle}. \lambda e_{\langle s \rangle}. x(e) = y$$

Recall that Bhatt (2003) analyzes the correlative-demonstrative as having the following constituent structure.

(44)  $\llbracket \llbracket \text{Cor}(\text{rel}) \rrbracket \llbracket \text{DemP} \rrbracket \rrbracket$

Note that the internal structure of the correlative-correlate constituent given in (43) is similar to the constituent structure Bhatt suggests; the correlative, the demonstrative, and the NP are all part of a single constituent. Under the approach I have presented here, though, the relationship between the correlative CP and the demonstrative correlate follows directly from the internal structure of the demonstrative itself. We can now see structurally how it is that the demonstrative correlate licenses the correlative to enter the syntax.

Just as the demonstrative combines with the covert index  $i$ , the correlate demonstrative will combine with the overt correlative  $\llbracket \text{book} \rrbracket$ .

- (45) [1]  $\llbracket \text{that } i \rrbracket =$   
 $\lambda f . \lambda g . \lambda e . \iota z (f(\llbracket \text{book} \rrbracket)(\lambda e' . z)(e) = 1 \ \& \ g(\lambda e' . z)(e) = 1 \ \& \ \text{distal}(\llbracket \text{book} \rrbracket, a, t))$

R denotes an identity relationship between  $\llbracket \text{book} \rrbracket$ , the book which Sera has written, and some argument of type  $\langle e \rangle$  in the main clause, denoted by  $z$ .

- (46) [2]  $\llbracket \text{that } i \text{ R} \rrbracket = \lambda g . \lambda e . \iota z . z = \llbracket \text{book} \rrbracket \wedge g(\lambda e' . z)(e) = 1 \wedge \text{distal}(\llbracket \text{book} \rrbracket, a, t)$

The correlative-correlate constituent, which is really a demonstrative phrase (DemP), has the following contribution.

- (47) [3]  $\llbracket \text{which book Sera wrote, that R book} \rrbracket =$   
 $\iota z . z = \llbracket \text{book} \rrbracket \wedge z(e) \text{ is a book}_{MC} \text{ in } e \wedge \text{distal}(\llbracket \text{book} \rrbracket, a, t)$

Finally, replacing  $\llbracket \text{book} \rrbracket$  with its semantic contribution, we have the semantic contribution of the demonstrative phrase (i.e., the correlative-correlate constituent).

- (48) [3]  $\llbracket \text{which book Sera wrote, that R book} \rrbracket =$   
 $\iota z . z \text{ is book}_{MC} \text{ in } e \wedge z = \iota x . \exists e . x \text{ is a book}_{RC} \text{ in } e \wedge \text{write}(e) \wedge \text{agt}(e, \text{Sera}) \wedge \text{pt}(e, x) \wedge$   
 $\text{perf}(e) \wedge \text{pres}(e) \wedge \text{distal}(x, a, t)$   
*The unique  $z$  such such that  $z$  is a book<sub>MC</sub>, and there is a unique, presupposed  $x$  such that  $z$  equals  $x$ , and  $x$  is a book<sub>RC</sub>, and there is an event  $e$  such that  $e$  is an event of Sera writing  $x$  and  $x$  distal.*

Notice that the two independent noun phrases –  $\text{book}_{RC}$  in the correlative clause and  $\text{book}_{MC}$  in the demonstrative phrase of the main clause – each make their own semantic contribution. This follows from there being two variables in the final composition,  $x$  and  $z$ , which each independently have the property of being books.

### 3.4. Deriving Independent Headedness

Recall from Section 2.2.2 that Hindi not only allows an overt nominal to appear in both the correlative clause and the main clause, but the two noun phrases do not have to be the same as long as they refer to the same entity. Example (49) is another example of this.

- (49) [jis        admi        se    sita ne    əpni        frɪj        kʰaridʰi]        [Hindi]  
 which.obl man.ms.obl from Sita erg own.ms refrigerator.fs buy.perf.fs  
 vo    dukəndar        bahʊt hoʃiʋar    hɛ  
 that storekeeper.ms very smart.ms be.pres.3s  
 'Which man Sita bought her refrigerator from, that storekeeper is very smart.'

This independent headedness follows directly from the analysis presented here. Because the correlative clause is constructed independently from the demonstrative phrase, both noun phrases may be distinct as long as the set of individuals picked out by the correlative clause has a contextually salient relationship with the interpretation, where the interpretation has the property denoted by the NP in the demonstrative clause.



components which each have their own semantic contribution (Nunberg 1993). These components translate to a syntactic structure which includes the index, not only as a semantic notion but which is in fact a lexical item within the syntactic structure (Elbourne 2008), which may then be spelled out overtly.

Given this account, it is not a coincidence that the correlate must be either a demonstrative, pronoun, or other indexical. In fact, it is their very indexicality which allows the correlative clause to enter the syntax. The correlative clause is an overtly pronounced index of the demonstrative phrase, and an argument of the demonstrative correlate.

The correlative as an index of the demonstrative not only shows how the correlative clause is able to enter the syntax, but directly leads to the syntactic features of the correlative construction such as dual headedness and independent case marking of the relative and demonstrative phrases.

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#### *Abbreviations*

cl	Classifier
compl	Complementizer
erg	Ergative
f	Feminine
fut	Future
hon	Honorific
impfct	Imperfect
loc	Locative
m	Masculine
mc	Main/Matrix Clause
neg	Negative
obl	Oblique
perf	Perfective
pres	Present
pro	Pronoun
prog	Progressive
rel	Relative Pronoun
s	Singular

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# The (not so) Inverse Marking in Plains Cree

Yuriy Kushnir

In this paper, I look at the system of verbal agreement in the Algonquian language Plains Cree. I argue that the inverse marking pattern observed in this language can be reduced to an instantiation of Differential Case Marking. I provide a DM-based analysis of the pattern and show that it is possible to capture the data using simple (non-portmanteau) case affixes and no unusual assumptions about the morphosyntax of the language (role-swapping in syntax, features of the kind [ $\pm$ INV], added probes etc).

## 1. Introduction: Linking and Inverse Morphology

Linking (i.e. providing information about the manner in which a predicate relates to its arguments) is undoubtedly one of the central parts of Grammar in all natural languages (Stiebels 2002). Some predominantly head-marking languages (*head marking* is used in the sense described in Nichols 1986) pose a challenge for Linking since their agreement formatives display only  $\varphi$ -features, but not the corresponding  $\theta$ -roles of the core arguments:

- (1) ARG1 [ $\varphi$ 1] ARG2 [ $\varphi$ 2] V- $\varphi$ 1- $\varphi$ 2  
'Arg1 V-s Arg2' or 'Arg2 V-s Arg1'?

In (1), it is not immediately clear which syntactic roles the two arguments bear. A possible disambiguating mechanism can be implemented in multiple different ways including the very common means of fixing different arguments in distinct surface positions (i.e. word order). In this case, marking the  $\varphi$ -features of one or both arguments would be, in a way, a redundant process since it would not contribute anything to the parsing of the predication by the listener. The only language behaving in this manner that I am personally aware of is Kichean (Preminger 2014:chap. 4&5), where there is a special agent-focus construction in which the verb obligatorily agrees with the more salient argument, but Linking essentially relies on word order.

Another method is the so-called *Inverse Marking*. Inverse marking is based on salience hierarchies where the participants of a transitive predication are ranked according to their level

of prominence in the discourse. In most cases, a language imposes certain ranking principles which cannot be overridden by pragmatic considerations in a conversation. Thus, arguments referring to speech act participants (SAP) are virtually always considered to be more salient than 3<sup>rd</sup>-person arguments: SAP  $\succ$  3.

The basic idea behind the concept of inverse marking is that subjects are expected to be more salient than objects. If this is not the case, special inverse markers are employed to ‘alarm’ the listener and signal to them overtly that the current argument configuration is unexpected. This phenomenon is typologically quite rare and observed in relatively few languages, Plains Cree being one of them. The goal of this work is to carry out an analysis of the agreement pattern observed in Plains Cree and investigate the nature of the inverse marking pattern.

The main claim that I pursue in this study is that, in Plains Cree, there is no morpho-syntactic feature of the type  $[(\pm)INV]$  (e.g. Stump 2001). Instead, its *direction markers* can be easily re-analyzed as fairly straightforward case affixes whose occurrence is determined by an intrinsic salience hierarchy. The system would then pattern neatly with many other languages which demonstrate the so-called *Differential Case Marking* phenomenon (Aissen 2003).

The remainder of the paper is structured as follows. In Section 2, I introduce the language and the phenomenon in focus, as well as the existing analyses available for it. In Section 3, I introduce the basics of the theoretical framework I chose and present my analysis which re-analyzes the direction markers of Plains Cree as case affixes. In Section 4, I summarize the main points of the paper.

## 2. *The Inverse Pattern in Plains Cree*

In this section, I introduce the language, as well as the inverse marking pattern observed in its system of verbal agreement.

### 2.1. *Plains Cree: a Quick Primer*

Taxonomy: Algonquian  $\rightarrow$  Cree (120,000 speakers)  $\rightarrow$  Plains Cree. The language is spoken in South-Western Canada and is closely related to the other varieties of Cree.

Morphologically, Plains Cree (PC) is polysynthetic with a certain degree of fusion (morpheme boundaries may be obscure due to morpho-phonological processes). The dominant inflectional mechanism is suffixing (with the exception of a few agreement prefixes and some preverbs). There is basically no dominant word order (Dahlstrom 1991). PC displays various types of predicate/argument placement within affirmative statements.

The example in (2) (Dahlstrom 1991:10) shows a fully inflected sample verb form (which may alone represent a full-fledged sentence).

- (2) ni-waapam-aa-w-ak  
 1-see-DIR-3.ANIM-3PL  
 ‘I see them.’

The system of nominal flagging is very simple. Besides a semantically quite obscure locative affix (Dahlstrom 1991), there are virtually no case formatives. However, nominal phrases are regularly marked for plurality and obviation (see Table 1).

PC has a complex system of verbal morphology. Transitive verbs agree with both arguments and can take multiple TAM markers. Since there are no structural cases on DP’s, Cree is a strictly head-marking language, as defined in Nichols (1986).

Central to the grammatical system of the language is the animate/inanimate gender distinction. Some semantically inanimate nouns have inherent animacy. The gender of a verb’s argument influences not only the morphology of the argument itself, but also the lexical choice of the appropriate verb stem. Thus, semantically identical or nearly identical verbs display different stems depending on the animacy status of their core arguments. Intransitive verbs vary according to the animacy status of their only argument; transitive verbs select animate/inanimate internal arguments. For instance, the verb stem *waapaht* translates as ‘to see something’, while *waapam* stands for ‘to see someone’. Inverse morphology – the central topic of this paper – is restricted only to transitive verbs with animate objects, or VAT. This will thus be the primary verb group relevant for this study.

	Animate	Inanimate
Proximate singular	naapeew ‘man’	miinis ‘berry’
Proximate plural	naapeew-ak	miinis-a
Obviative singular	naapeew-a	miinis
Obviative plural	naapeew-a	miinis-a

Table 1: Nominal morphology in Plains Cree (Dahlstrom 1991)

The category of *obviation* is extensively used in Algonquian languages and is one of the characteristic typological features of the family. It becomes very useful when one deals with configurations where there are two or more 3<sup>rd</sup>-person participants. In this case, one is usually picked out as the most salient/central one for the current discourse and is therefore deemed *proximate*. All other 3<sup>rd</sup>-person actants are then considered to be *obviative*, i.e. less prominent in the foreground. There are propositions without a single proximate argument, but if there are any, there may only be one per predication. All non-proximate DP’s have to be overtly marked as obviative using bound nominal morphology. The obviative affix replaces plural morphology, so an obviative DP is underspecified for number. Obviative arguments are also marked distinctly on verbs. Even though inanimate nouns do not inflect for obviation overtly, their status is seen on verbal agreement affixes.

Crucially, the use of obviation allows two animate 3<sup>rd</sup>-person arguments to be ranked on two different hierarchical levels. This will be central for the case-encoding mechanism which is discussed extensively below.

Intrinsic to the grammar of PC is its salience hierarchy (Klaiman 1992). Every DP denoting a referent is assigned a certain rank depending on its centrality for the discourse. It is partly up to the speaker which participant in a proposition to rank as more central (i.e. marking it as

proximate or obviative); however, in most cases, the ranking is obtained from a scale specific to the language and identical for all of its speakers. While a speaker may decide which one of two 3<sup>rd</sup>-person arguments is more salient, an SAP argument is always ranked higher than a 3<sup>rd</sup>-person one; a similar relation holds true within the SAP domain with the 2<sup>nd</sup> person usually outranking the 1<sup>st</sup>.

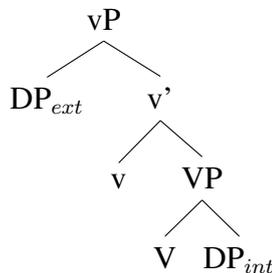
- (3) 2 > 1 > 3 > 3' > 3'' > inanimate<sup>12</sup>

This salience hierarchy is central for the choice of agreement affixes in PC. For instance, in the prefix position, a 2<sup>nd</sup>-person argument will always be marked regardless of its  $\vartheta$ -role or the presence of any other arguments in the proposition. This preference for the insertion of the 2<sup>nd</sup>-person marker, however, is not the primary effect caused by the salience hierarchy encoded in the language's grammar. Much more important is the interplay of this hierarchy and the conditions governing the insertion of *direction (case) markers*. These are discussed in Section 3 below.

## 2.2. Inverse Morphology in Plains Cree

As I mentioned above, at the core of inverse marking lies the basic necessity to ensure proper argument realization in predications with more than one argument. A standard transitive predication can be visualized in the tree in (4) (adapted from Adger 2003):

- (4) *The structure of the vP:*



The extended verbal projection initially selects the internal argument and then the external one. In canonically transitive cases, the internal argument is assigned the  $\vartheta$ -role of a patient, and the external argument is in the agentive role. Once the appropriate lexical entries have been inserted and the structure appears on the surface, the listener's parsing apparatus needs a mechanism to identify the syntactico-semantic roles of the two arguments. It has already been mentioned that the simplest way out may be introducing a rigid order of constituents, i.e. to impose a constraint on the language's syntax which would prohibit scrambling the arguments out of their base positions.

Another common strategy used instead of or alongside linear ordering is nominal case marking. In this scenario, a nominal phrase carries a flag (which may be expressed in different ways on the surface) indicating its syntactic function.

In PC, a language with no case markers on nouns and relatively free word order, the personal agreement morphology only reflects  $\phi$ -features and not the thematic roles assigned to the

<sup>1</sup> 3' and 3'' stand for 'obviative' and 'further obviative' respectively.

<sup>2</sup> The first person outranks the second in one inflectional slot.

arguments by the predicate. An additional mechanism is employed in order to disambiguate the argument configuration:

(5) *Direct VS Inverse* (Zúñiga 2006:pg. 76)

- a. ni-seekih-aa-w  
1-scare-DIR-3.ANIM  
'I scare him/her.'
- b. ni-seekih-iko-w  
1-scare-INV-3.ANIM  
'(S)he scares me.'

Both arguments – the 1<sup>st</sup> person singular and the 3<sup>rd</sup> person singular (animate) – are indicated on the verb via bound affixes: a prefix and a suffix. Each affix reflects certain  $\varphi$ -features of its argument. However, neither one of them is specified for its syntactic function. In both sentences, the affixes look identical. Introducing independent personal pronouns would be of little help since Plains Cree does not mark structural cases on DP's. Moreover, it has a (relatively) free order of words. The solution for this issue is the introduction of two additional morphemes inserted into the structure of the verb. In the glosses, they are referred to as DIR(ect) and INV(erse) respectively.

According to the salience hierarchy in (3), the two arguments in the proposition are located on two different hierarchy levels since SAP arguments are intrinsically treated as more salient/central for the discourse than any 3<sup>rd</sup>-person arguments.

It is therefore assumed by the speaker/listener that, in a transitive predication, a 1<sup>st</sup>-person participant should canonically be the subject, while a less salient participant is more likely to be the object (since subjects are expected by default to be more prominent than objects).

In the case where this does not hold true, the argument configuration (3>1) is misaligned with the salience hierarchy. This misalignment is reflected on the surface via a special *inverse* marker, while a proper alignment is reinforced by a *direct* morpheme.

*Thus, the special inverse morphology indicates whether the agent/patient configuration matches the relative location of the two arguments on the salience scale.*

The inverse pattern observed in Cree and other Algonquian languages is a fairly rare typological feature. It is found in some other Native American languages, in Basque, as well as a handful of Tibeto-Burman languages in Asia. Most languages with the inverse pattern are notoriously strictly head-marking (Klaiman 1992), i.e. they tend to not use case flagging on DP's. In an idealized case, the direct/inverse configuration would have the following shape:

(6) Arg1 Arg2 V- $\varphi$ 1- $\varphi$ 2-DIR/INV

Unfortunately, this idealized scheme does not occur in its pure form in most cases. While the individual agreement morphemes do indeed display only the  $\varphi$ -features of the respective arguments, the directional affixes frequently encode not only directionality, but also partial information about the argument configuration, in a way reinforcing the information previously provided by the agreement morphology.

Thus, the direct morpheme in Plains Cree has the form /-ee/ or /-aa/ depending on whether the agent is SAP or not. In local scenarios, i.e. 1>2 or 2>1, the directional affixes are completely distinct from non-local and mixed scenarios and seem to be (at the first glance) portmanteau formatives indicating within one morph the entire subject/object configuration.

These complications naturally pose questions concerning the very nature of ‘inverseness’. Klaiman (1992) proposes a series of criteria which can be used cross-linguistically in order to determine a language’s adherence to the so-called *inverse type*, as well as its relative location within the boundaries of the type. In this work, I will not be analyzing Plains Cree according to these criteria.

☞ *My primary goal is assessing the necessity of (a) a special morpho-syntactic feature encoding the direct/inverse configuration of arguments and (b) additional agreement mechanisms in the system.*

Is there a feature [ $\pm$ INV] which indicates grammatical function swapping (see Stump (2001) for a feature that encodes a ‘major reference object’)? If not, how does one explain the phenomena observed on the surface in the languages belonging to this type? Most descriptive works dedicated to PC (e.g. Dahlstrom 1991, Wolfart 1973) do not provide a formal account of the phenomenon. While overall very insightful, Zúñiga (2006) and Klaiman (1992) do not exactly analyze inverse patterns using generative approaches. Oxford (2014) and Béjar & Rezac (2009) provide entirely agreement-based accounts for this phenomenon in Algonquian languages without talking directly in case terms. One can consult the respective papers for the details on these accounts where inverse morphemes show up in contexts where ‘extracurricular’ agreement has taken place. Trommer (2004) proposes a case-based account within the Distributed Optimality framework, with several portmanteau affixes and an optimization component involved.

In Section 3, I will show how inverse morphology in PC can be analyzed as an instantiation of Differential Case Marking, without portmanteaus, special inverse features or additional assumptions for agreement. I will move along the lines of the ideas presented in Wunderlich (2005) and Trommer (2004), and then propose an analysis of verbal agreement in Plains Cree exclusively within the framework of Distributed Morphology (Halle & Marantz 1993, 1994).

### 2.3. Plains Cree: VTA Agreement Paradigms

In the Section 2.1, I mentioned briefly the existence of different verb classes in Plains Cree grouped according to the gender properties of the arguments that they select. Thus, intransitive verbs are either animate or inanimate depending on the type of their only core argument. Transitive verb stems select animate or inanimate internal arguments. The external argument may be of any type. Transitive animate verbs (VTA) are the group which demonstrates the inverse pattern visibly. All combinations of arguments are possible here, including those with an inanimate subject acting on an animate object (the object is, by definition, always animate in this group).

The scope of this work doesn’t permit one to capture the entire diversity of forms in Plains Cree. I will therefore focus primarily on the morphology used in the so-called *independent order* (basically, a mood used in most types of matrix clauses).

The inflectional affixes of Plains Cree are situated in multiple inflectional slots, most of them on the right-hand side of the stem. Only one prefix slot is available for agreement morphology in the independent forms.

In almost all of the agreement slots, there is a range of competing affixes. In this case, the ones ordered higher in the table are prioritized. That is, the search algorithm moves from top to bottom and stops after finding the first matching candidate.

Slot -1 is reserved for SAP arguments. Regardless of its  $\emptyset$ -role, a 2<sup>nd</sup>-person argument will

Slot	Affix	Context
-1	a ki-	presence of a 2 <sup>nd</sup> -person argument
-1	b ni-	presence of a 1 <sup>st</sup> -person argument
0	a V	verb stem
1	a -im	<i>strong direct: SAP&gt;3' / 3 &gt; 3''</i>
2	a -i	DIR: 2>1
2	b -iti	INV: 1>2
2	c -aa	DIR: SAP>3
2	d -ee	DIR: 3>3' / 3' > 3''
2	e -iko	INV: elsewhere
3	a -iji	3'>SAP.SG / 3'>3'' / 3''>3'
4	a ...	TAM
5	a -naan	presence of a 1PL argument
5	b -naw	presence of a 12 argument
5	c -waaw	presence of a 2PL argument
5	d -w	presence of a 3.ANIM argument
5	e -n	elsewhere (both arguments SAP.SG)
6	a ...	TAM
7	a -ak	presence of a 3PL argument
7	b -∅	presence of a proximate 3 <sup>rd</sup> -person argument
7	c -a	presence of a 3'/3'' argument
8	a ...	TAM

Table 2: The basic verb template in Plains Cree  
(adapted from Zúñiga 2006)

always be marked with /ki-/. This applies to all 2SG, 2PL and 12 arguments. If the 2<sup>nd</sup> person is not present in the configuration, an argument in the 1<sup>st</sup> person will be marked with /ni-/, if present. In non-local scenarios, the slot remains empty.

In Slot 5, the basic hierarchy of Plains Cree is slightly violated. Here, 1<sup>st</sup>-person arguments in the plural are preferred. If none are found, the algorithm inquires for a 2<sup>nd</sup>-person plural argument. That not being available, a 3.AN argument will be marked (in most cases). The last resort option, the affix /-n/, will appear only in local singular scenarios (1SG>2SG or 2SG>1SG), as well as in the scenario INAN>1/2SG. This preference allows for plurality to be marked more adequately in local scenarios, and this is also the place where SAP plurality shows up in mixed scenarios.

Slot 7 is reserved for 3<sup>rd</sup>-person arguments only. The plurality of a proximate 3<sup>rd</sup>-person argument is reflected by the affix /-ak/. Otherwise, an obviative 3<sup>rd</sup>-person argument may be indicated by an /-a/, but only if there are no proximate 3<sup>rd</sup>-person arguments.

The three slots which are of primary interest for this study are the ones with gray shading (1, 2, 3). These are the slots where the inverse pattern is found. These three slots thus serve the purpose of encoding which one of the arguments is in the agentive role and which one is the patient. In Slot 2 (the primary direction-marking slot), 2 groups of morphemes may be distinguished:

- the morphemes /-i/ and /-iti/ which are used only in local scenarios (often referred to as *direct* and *inverse*, as well);
- the morphemes /-aa/, /-ee/ (*direct*) and /-iko/ (*inverse*) which are at work in mixed and local scenarios.

The affixes 2c and 2d in the table above are considered to be allomorphs in some sources. However, I will assume that the difference in form is bound to a difference in meaning in this case, as well. The morpheme /-aa/ marks a *direct* mixed scenario, i.e.  $SAP > 3(\cdot)$ . The morpheme /-ee/ marks a *direct* non-local scenario, i.e. a configuration with two 3<sup>rd</sup>-person participants, where the agentive argument has a higher salience status than the patient.

The other configurations are *inverse* (suffix /-iko/). These are mixed and non-local scenarios where the agentive argument is ranked below the patient on the salience scale. Note that, in all the instances where /-iko/ shows up, the subject is invariably in the 3<sup>rd</sup> person. This will become relevant shortly.

The morpheme /-im/ in Slot 1 reinforces the direct suffixes /-aa/ and /-ee/ in situations where the patient is further down on the hierarchy scale than just one level below the agent. The affix /-iji/ in Slot 3 marks an obviative agent in a range of very specific configurations. Examples (7) and (8) below are adapted from Dahlstrom (1991) and illustrate local and non-local inflected forms respectively.

(7) *Local configurations,  $SAP <> SAP$*

- a. ki-waapam-i-n  
2-see-2>1-SAP.SG  
'You see me.'
- b. ki-waapam-iti-n  
2-see-1>2-SAP.SG  
'I see you.'

(8) *Non-local configurations,  $3 <> 3$*

- a. Ø-waapam-ee-w  
3-see-DIR-3.ANIM  
'This one sees that one.'
- b. Ø-waapam-iko-w  
3-see-INV-3.ANIM  
'That one sees this one.'

### 3. The Analysis

This section presents the analysis of the inverse marking pattern shown above. In order to analyze the data, I use the Distributed Morphology framework and basic minimalist assumptions for syntactic derivations. I abstain from addressing topics such as word order and concentrate solely on the mechanisms I believe are employed for direction marking.

#### 3.1. The Basic DM Apparatus

The basic concepts of Distributed Morphology were first outlined by Morris Halle and Alec Marantz (Halle & Marantz 1993, 1994). The main assumption made by them for this particular framework is that, instead of being concentrated in a single grammar module, the machinery of morphology (in the traditional understanding of the term) is distributed among several separate components.

A crucial component of DM is the operation of *Impoverishment*. This is the main means of capturing instances of a loss/weakening of overt marking of a grammatical category. Impoverishment is a procedure which deletes morpho-syntactic features in particular contexts, making these contexts more general. In these configurations, highly specific markers cannot be inserted since they violate the strict *Subset Principle* (i.e. the morpho-syntactic features of a VI must realize a subset of the morpho-syntactic features of the terminal node this VI is inserted into). The subsequent insertion of a less specific VI is called *Retreat to the General Case*. Apart from being used widely to capture syncretisms in inflectional paradigms, impoverishment rules can provide an adequate account for other phenomena, e.g. the absence of certain categories in specific contexts etc. In this study, Impoverishment will serve as the base for the postulated system of differential case marking.

In addition to Impoverishment, I assume that, in some exceptional instances, feature values may be changed by special feature-adjusting rules. Also, since there are instances of multiple exponence in PC, I assume the existence of enrichment rules (Müller 2007), which may create additional copies of individual morpho-syntactic features and their values.

When lowering<sup>3</sup> syntactic heads and placing them in new positions, it is important to differentiate between the operations *Merger* and *Fusion*. The operation *Morphological Merger* is defined as follows (adapted from Halle & Marantz 1993):

*At any level of syntactic analysis (d-structure, s-structure, phonological structure), a relation between X and Y may be replaced by (expressed by) the affixation of the lexical head of X to the lexical head of Y.*

The operation *Fusion* is defined as follows (adapted from Halle & Marantz 1993):

*Two nodes that have undergone Morphological Merger or that have been adjoined through syntactic head movement can undergo Fusion, yielding one single node for Vocabulary insertion.*

In DM, every time there is a competition among several candidates for filling a slot in a terminal node of a syntactic tree, the *specificity principle* comes into play, which requires the most

<sup>3</sup> The operation *Lowering*, normally viewed as counter-cyclic, is possible in post-syntax.

specific vocabulary item, i.e. the one with the highest number of morpho-syntactic features (or the one containing more prominent features), to be inserted into the respective slot. This corresponds neatly to the *Elsewhere Principle / Pāṇini's Principle* if one assumes that vocabulary insertion rules are ordered intrinsically.

### 3.2. Person and Other $\varphi$ -Features

Grammatically, the following types of arguments are differentiated in Plains Cree:

- (9)
- 1 → the speaker (+ further individuals, but not the addressee);
  - 12 → the speaker and the addressee (+ further individuals);
  - 2 → the addressee (+ further individuals, but not the speaker);
  - 3 → a proximate non-participant;
  - 3' → an obviative non-participant;
  - 3'' → a non-participant dependent on an obviative non-participant.

In order to capture the underspecified morphemes, we will need to decompose the person categories into bundles of binary features. At least 3 binary features are needed to capture a 5-way opposition. One also has to take into consideration the natural classes that have morphological reflexes. For instance, a very important opposition in Cree is SAP vs non-SAP. In order to draw a line between these two classes, the binary feature  $[\pm\text{part}]$  will be introduced.<sup>4</sup> In the domain of SAP arguments, one may introduce a  $[\pm 2]$  feature to reflect the opposition between the first and the second person. However, the following arguments – 12 and 2 – still have the same decomposition pattern:

- (10)
- i.  $\{ +\text{part} -2 \} \leftrightarrow 1$
  - ii.  $\{ +\text{part} +2 \} \leftrightarrow 12 \text{ or } 2$
  - iii.  $\{ -\text{part} -2 \} \leftrightarrow 3\text{prox}$
  - iv.  $\{ -\text{part} -2 \} \leftrightarrow 3\text{obv}$

Moreover, the non-SAP argument types both have the same specification, i.e. their salience status is not reflected. In a minimalist approach, it would of course be reasonable to introduce only one additional feature which would help fill in the two remaining gaps in the system ( $[\pm\gamma]$  in the most abstract sense). A first-person feature, i.e.  $[\pm 1]$ , will help discriminate 12 and 2, but it will not at all be helpful in the domain of non-SAP arguments since there is nothing in its semantics that points to more proximate/distal arguments. Therefore, a different feature is needed. The feature suggested in this work is  $[\pm\text{prox}]$ .

While one could apply this feature in the SAP domain in order to distinguish between 12 and 2, it is indeed difficult to logically motivate it in an elegant enough manner.<sup>5</sup> Therefore, both

<sup>4</sup> In this paper, I will be using binary features as in Müller (2006). Due to space limitations, I am unfortunately not able to explore in great detail the various theoretical alternatives to representing feature structures. For more information on morpho-syntactic features, the reader is advised to look at recent papers dealing with this topic, e.g. Adger (2010); Harbour et al. (2008).

<sup>5</sup> One way of doing this would be to assume that a 12 argument is an amalgam of two actants – 1 & 2. In this case, the feature  $[\pm 2]$  would indicate the presence of the addressee, and the feature  $[\pm\text{prox}]$  would indicate the presence of a less prominent actant within the configuration, i.e. the speaker (next on the prominence scale of PC).

[±1] and [±prox] will be used in this work. While this may not be exactly minimal, it is at least logical.

- (11) i. { +part -2 +1 +prox } ↔ 1
- ii. { +part +2 +1 +prox } ↔ 12
- iii. { +part +2 -1 +prox } ↔ 2
- iv. { -part -2 -1 +prox } ↔ 3
- v. { -part -2 -1 -prox } ↔ 3'

For the so-called ‘further obviative’ category (an entity dependent on an obviative one), the feature { ±dep } will be introduced:

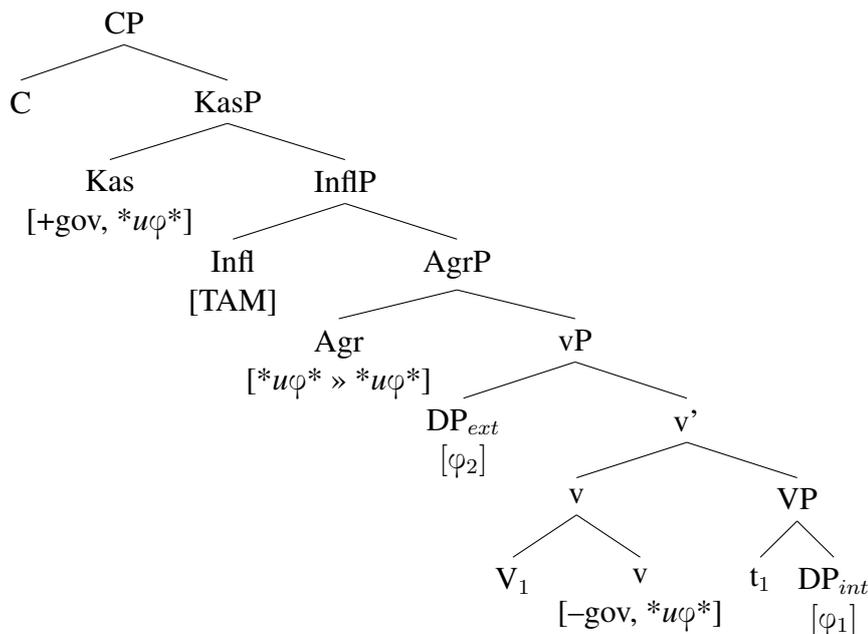
- (12) { -part -2 -1 -prox +dep } ↔ 3''

Since there are only two numbers in Plains Cree, the binary feature [±pl] will totally suffice. The feature [±an(im)] distinguishing the two genders of Plains Cree may seem to not be immediately necessary in VTA predications, but it definitely is an important feature if one looks at the big picture. It has, for instance, immediate implications for nominal morphology (see above).

### 3.3. On the Syntactic Structure

The tree in (13) below illustrates the basic minimal syntactic structure that I assume for Plains Cree matrix clauses. Within the tree, I show the articulated structure of the Infl/T-layer (see Pollock 1989).

(13) The clausal structure:



I assume the following projections to be relevant for this study:

- Agr(eement): this head's  $\varphi$ -probes agree cyclically with both arguments, first the subject and then the object (according to basic locality principles as in Rizzi (1990));
- Infl(ection): this is the locus of the clausal categories of tense, aspect and mood;
- Kas(us): this head case-licenses the subject by establishing an Agree relation with it. It receives the subject's  $\varphi$ -features in exchange for case.

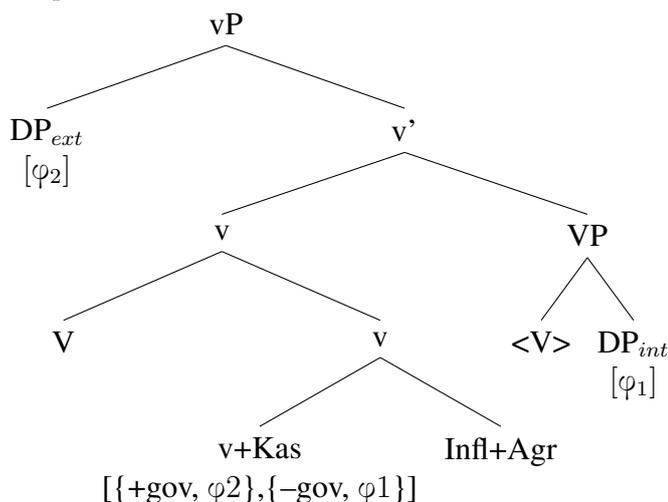
Additionally, within the vP-projection, the  $v$ -head case-licenses the direct object, also in exchange for its  $\varphi$ -features. The features [+gov] and [-gov] reflect one part of the morphological featural decomposition of the syntactic case features Erg(ative) (assigned by Kas) and Acc(usative) (assigned by  $v$ ). For a more detailed description of how case features are decomposed, see Müller & Thomas (to appear).

As I said above, the functional head Agr receives  $\varphi$ -features from both arguments via downward probing. Once all the probing features have been discharged, the inner content of the head has the following structure:

- (14) Agr [ \* $u\varphi$ \* » \* $u\varphi$ \* ] ►  
 Agr [ {  $\pm 2$   $\pm$ dem  $\pm$ obv  $\pm$ dep  $\pm$ pl }, {  $\pm 2$   $\pm$ dem  $\pm$ obv  $\pm$ dep  $\pm$ pl } ]

The important assumption I am making here is that the two feature bundles are kept separate from each other, as opposed to having a totally unordered 'bag of features' (Deal 2015) with both arguments collapsed in one common 'pool'. While the basic features have a one-level structure (following Adger 2010), the functional heads have sets as members of their specification sets. After being lowered, the Agr head is merged and subsequently fused with the Infl head. The Kas head is, in its turn, merged and fused with  $v$ . The resulting syntactic structure will have the shape provided in the figure below:

- (15) *The pre-insertion structure:*



Once this final structure has been generated, the vocabulary insertion mechanism takes over. In the fused *Infl+Agr* head, the VI insertion rules apply in several disjoint rule blocks. The cycle inserting TAM-specific morphemes alternate with those inserting agreement affixes. The entire procedure has the following schematic representation:

- (16) TAM 1 → Agr 1 → TAM 2 → Agr 2 → TAM 3

What exactly happens with the  $v+Kas$  head will be discussed extensively in the following three subsections.

### 3.4. Differential Case Marking

Under *Differential Case Marking (DCM)*, one should understand a phenomenon where the arguments of a predicate bear case markers only in a range of specific contexts defined by the respective language's grammar. Aissen (2003) has the following general definition for differential object marking (DOM):

*"It is common for languages with overt case-marking of direct objects to mark some objects, but not others, depending on semantic and pragmatic features of the object. I call this phenomenon differential object marking (DOM)."*

The contexts in which arguments are overtly marked for case may be determined by hierarchy scales which are conceptually the same as the salience hierarchies demonstrated by languages like Cree (Silverstein 1976):

- (17) Definiteness hierarchy: Index(ical) > PN > DP<sub>def</sub> > DP<sub>indef.spec</sub> > DP<sub>indef.nspec</sub> Animacy hierarchy: Human > Animate > Inanimate;  
 Person scale: SAP > 3  
 Proximity hierarchy: proximate > obviative  
 ...

Different types of potential predication participants are deemed (based on these hierarchies) more or less prototypical for the thematic role they bear. Thus, SAP arguments are much more likely to be in the agentive role, while 3<sup>rd</sup>-person arguments (especially indefinite/inanimate/non-specific ones) are typically patients. If an argument is not prototypical, it is penalized with an overt case marker. The specific location on a scale after which overt marking is obligatory is parametrized across languages. Thus, some languages will only case-mark pronominal and PN-objects while others only leave non-specific objects unmarked. Modern Hebrew is a good example of a language with differential object marking. The accusative marker /ʔet/ is employed in Hebrew only with definite objects, including personal pronouns and personal names.

- (18) *Modern Hebrew (own data):*
- a. ʔani    ʔɔʔ-ε            jɛləd  
 1SG(M) see\PRS-M.SG boy  
 'I see a boy.'
- b. ʔani    ʔɔʔ-ε            ʔet=ha-jɛləd  
 1SG(M) see\PRS-M.SG ACC=DEF-boy  
 'I see the boy.'
- c. ʔani    ʔɔʔ-ε            ʔet=χɛm  
 1SG(M) see\PRS-M.SG ACC=2PL.M  
 'I see you.'

- d. ?ani    ʔɔʔ-ε            ?εt=sara  
 1SG(M) see\PRS-M.SG ACC=PN  
 ‘I see Sarah.’

In most varieties of modern Spanish, personal pronouns, personal names, as well as (definite) noun phrases denoting human referents, are always marked accusative in the patient role. Other DP’s remain unmarked (indefinite human objects may be marked optionally).

(19) *Spanish (data kindly provided by M. Guzmán Naranjo, Leipzig University):*

- a. ve-o                    \*(a)    Juan  
 see-PRS.1SG \*(ACC) Juan  
 ‘I see Juan.’
- b. lo/\*el                            ve-o  
 3SG.M.ACC/\*NOM see-PRS.1SG  
 ‘I see him.’
- c. conozc-o            (a)    un                    abogado  
 know-PRS.1SG (ACC) INDEF.M.SG lawyer(M)  
 ‘I know a lawyer.’
- d. ve-o                    \*(a)    un-a                    casa  
 see-PRS.1SG (\*ACC) INDEF-F.SG house(F)  
 ‘I see a house.’

Differential Subject Marking is statistically more rare than DOM. A couple of examples are found in Malchukov (2007). For instance, only inanimate agents (of the neuter gender) take the ERG case in the Mangarayi language, while animate agents (masculine or feminine) do not. An even more interesting pattern is found in Samoan, as in (20). While the language consistently marks animate agents with the ERG (Malchukov 2007), inanimate ones may optionally carry the oblique marker instead of the ergative.<sup>6</sup>

(20) *Samoan (Mosel & Hovdhaugen 1992):*

- a. na tapuni e    le    matagi le    faitoto’a  
 PST close ERG ART wind ART door  
 ‘The wind closed the door.’
- b. na tapuni i    le    matagi le    faitoto’a  
 PST close OBL ART wind ART door  
 ‘The wind closed the door.’

I will show that, in Plains Cree, subjects are marked either with the ergative case or left unmarked depending on their properties. The same applies to direct objects showing up either in the accusative or unmarked.

<sup>6</sup> As we will shortly see, the oblique marker in Plains Cree also appears with low-salience subjects (in a restricted range of contexts).

## 3.5. Differential Case Marking in Plains Cree

In the paragraphs above, I briefly addressed differential case marking on nominal phrases. However, the concept can undoubtedly be extended to head-marking languages, as well. Indeed, head-marking languages exhibit a whole variety of different approaches to argument linking, with the individual methods being quite diverse. One finds ergative, accusative, active and tripartite patterns. Alongside these basic patterns, there are more complex systems with various splits. While many languages agree with both of their arguments, some only have one agreement position reserved for the more salient participant.

In PC, there are multiple agreement slots. Most of them serve the sole purpose of indicating the presence of a particular argument, without telling the listener anything about its thematic role. Only three agreement slots – 1, 2, and 3 – serve the purpose of disambiguating the argument configuration. Of these three slots, Slot 2 always carries the primary direction-marking morpheme. Slots 1 and 3 are secondary.

If we assume the following scale as the underlying hierarchy at work in Plains Cree –

$$(21) \quad 2 \succ 1 \succ 3 \succ 3' \succ 3'' \succ 0$$

– we can then rank subjects and objects (i.e. agentive and patient-like arguments) as more or less prototypical according to their location on the hierarchy scale. Thus, SAP arguments are the prototypical subjects which, in a differential case marking system, would not need to bear any overt case morphology. We can use the notation Abs/Nom/Null-Case for this (further abbreviated to  $\emptyset$ ). The same applies to 3<sup>rd</sup>-person patients which will also carry no case markers. So, in SAP>3 scenarios, neither one of the two arguments would appear on the surface with an overt case flag in our hypothetical idealized system. Less typical agents, i.e. those of the 3<sup>rd</sup> person or inanimate, would have to be marked with the ergative case since their syntactic role is in this case unexpected. Following the same logic, SAP patients would have to be marked for the accusative case (or, in Müller & Thomas (to appear), an overt absolutive) in order to be parsed properly. Note that this kind of overt case marking is crucial in languages with free word order. The case marking pattern can be summarized as follows:

- (22)     • **Agent:** unmarked if prototypical, Erg otherwise;  
           • **Patient:** unmarked if prototypical, Acc otherwise.

Table 3 (based on ideas outlined in Wunderlich 2005) juxtaposes the direction markers of PC with the differential case marking system outlined in the paragraphs above.<sup>7</sup> The shaded area represents the so-called *inverse* domain.<sup>8</sup> Some important inferences that may be drawn from Table 3 are:

1. The affix /-iko/ represents scenarios with ergative 3<sup>rd</sup>-person agents;
2. The affixes /-i/ and /-iti/ are accusative markers for SAP arguments;
3. The affixes /-aa/ and /-ee/ are case-unspecific markers realizing  $\phi$ -features only;

<sup>7</sup> Note that inanimate objects are not represented here because they only appear with the other class of transitive verbs.

<sup>8</sup> In my analysis, I will not distinguish conceptually between 2>1 and 1>2 as most descriptive literature does (deeming them *direct* and *inverse* respectively). Both scenarios mark an accusative SAP object.

Ag/Pt	3'	3	1	2
2	Ø/Ø :: -aa	Ø/Ø :: -aa	Ø/Acc :: -i	RFL
1	Ø/Ø :: -aa	Ø/Ø :: -aa	RFL	Ø/Acc :: -iti
3	Erg/Ø :: -ee	RFL	Erg/Acc :: -iko	Erg/Acc :: -iko
3'	<i>rare</i>	Erg/Ø :: -iko	Erg/Acc :: -iko	Erg/Acc :: -iko
0	Erg/Ø :: -iko	Erg/Ø :: -iko	Erg/Acc :: -iko	Erg/Acc :: -iko

Table 3: A case-marking system based on the Plains Cree salience hierarchy

4. In the 3>3' configuration, the ergative marker /-iko/ disappears because of the low salience of the object relative to the subject.

In the following subsection, I will be using the syntactic structure from Section 3.4 and the theoretical framework outlined in Sections 3.1 and 3.2 in order to capture the distribution of case affixes in Table 3.

### 3.6. Case Alignment Rules

If the case alignment rules were to be outlined strictly according to the general principles described in the section introducing Distributed Morphology, the vocabulary item /-iko/ would be chosen as the *elsewhere marker*. It appears in a range of cells within the paradigm, which, combined together, form a continuous area in the bottom-right corner of the conjugation table.

One could, however, introduce a different approach to viewing the case alignment table presented above. In this (possibly more plausible) approach, the affix /-iko/ will be analyzed as one of the more specific markers representing the ergative case of a 3<sup>rd</sup>-person subject. The markers /-i/ and /-iti/ will mark the accusative case of SAP arguments. The markers /-aa/ and /-ee/ will only bear  $\varphi$ -features.

The most unspecific marker in this scenario is the morpheme /-ee/. It only appears in a limited number of cells in the paradigm, but it could indeed be viewed as a sort of *retreat to the general* (= *unmarked*) case: while it is postulated that the language does want to mark ergative 3<sup>rd</sup>-person subjects, there no point in doing that in constellations where the object is located even further down on the salience scale.

For the purposes of determining rule specificity, I assume the following case hierarchy:

- (23) Erg [+gov]  $\succ$  Acc [-gov],  
i.e. ergative features are more specific than accusative features.

The vocabulary item insertion rules are presented below:

- (24) i. { +gov +part +2 }  $\leftrightarrow$  /-X<sub>1</sub>/ (hypothetical 2.ERG marker)  
ii. { +gov +part }  $\leftrightarrow$  /-X<sub>2</sub>/ (hypothetical 1.ERG marker)  
iii. { +gov -part }  $\leftrightarrow$  /-iko/ (3.ERG)  
iv. { -gov +part +2 }  $\leftrightarrow$  /-iti/ (2.ACC)  
v. { -gov +part }  $\leftrightarrow$  /-i/ (1.ACC)

- vi. { -gov -part } ↔ /-X<sub>3</sub>/ (hypothetical 3.ACC marker)
- vii. { +part } ↔ /-aa/ (SAP.ABS)
- viii. { (-part) } ↔ /-ee/ (3.ABS / elsewhere)

While the hypothetical affixes do not exist in the actual inventory of direction markers in PC, I am including them here in order to provide a more principled account of what happens in the language: even if the respective morphemes did exist, their insertion should and would be effectively blocked by the grammar.

Without any impoverishment rules, the system would work as shown in Table 4.

Ag/Pt	3'	3	1	2
2	-X <sub>1</sub>	-X <sub>1</sub>	-X <sub>1</sub>	<i>rfl</i>
1	-X <sub>2</sub>	-X <sub>2</sub>	<i>rfl</i>	-X <sub>2</sub>
3	-iko	<i>n/a</i>	-iko	-iko
3'	<i>rare</i>	-iko	-iko	-iko

Table 4: Distribution of case affixes without impoverishment

It is evident that the hypothetical ergative markers for SAP arguments would take over the first two rows in the table. Crucially, these markers represent prototypical subjects which, as I said before, need not be case-marked. In order to eliminate these two affixes, I introduce the following impoverishment rules:

- (25) I. +gov → Ø / [ { \_\_\_\_ +part } ]
- II. -gov → Ø / [ { \_\_\_\_ -part } ]<sup>9</sup>

The result after applying impoverishment is presented in Table 5. The local configurations now correctly show the respective accusative markers. Additionally, the specific ergative markers in SAP>3 configurations have been replaced with the case-neutral marker /-aa/ which merely indicates the presence of an SAP argument.

Ag/Pt	3'	3	1	2
2	-aa	-aa	-i	<i>rfl</i>
1	-aa	-aa	<i>rfl</i>	-iti
3	<b>-iko</b>	<i>n/a</i>	-iko	-iko
3'	<i>rare</i>	-iko	-iko	-iko

Table 5: Distribution of case affixes after impoverishment

The remaining issue is to ensure the insertion of /-ee/ in 3>3' contexts. As of now, the system 'correctly' inserts the 3<sup>rd</sup>-person ergative marker since the subject is not salient enough to remain unmarked. In order to eliminate this ergative affix, I assume an additional impoverishment rule which deletes ergative features on 3<sup>rd</sup>-person subjects appearing together with an object whose salience status is even lower:

<sup>9</sup>The accusative marker for 3<sup>rd</sup>-person markers is independently blocked by rule specificity alone. Nonetheless, I am postulating this impoverishment rule for a more complete account. With this rule in place, even a very specific (featurally) vocabulary item for 3.ACC could not possibly be inserted.

- (26) I. +gov  $\rightarrow \emptyset / [ \{ \text{___} +\text{part} \} ]$   
 II. -gov  $\rightarrow \emptyset / [ \{ \text{___} -\text{part} \} ]$   
 III. +gov  $\rightarrow \emptyset / [ \{ \text{___} -\text{part} -\text{dep} \} \{ -\text{prox} \} ]$

With this latter impoverishment rule in place, the system will yield the correct conjugation paradigm in PC. This specific configuration – 3>3’ – is the only instance where the grammatical system of PC demonstrates a Global Case Split: the case of the subject is dependent on the properties of the object and not the subject alone.

### 3.7. The Conjunct Order

The system described is easily extendable to intransitive verbs and transitive verbs selecting inanimate objects. A more challenging issue is the so-called *Conjunct Order* constituting verb forms appearing mainly in various types of subordinate clauses. In the conjunct forms (Table 6), some directions markers disappear in particular configurations of arguments (which seem to be rather arbitrary).

Order	Independent		Conjunct	
	DIR	INV	DIR	INV
1:2	-i	-iti	-i	-it
1SG:3	-aa	-iko	- $\emptyset$	- $\emptyset$
1PL:3	-aa	-iko	-aa	-iko
2SG:3	-aa	-iko	- $\emptyset$	- $\emptyset$
2PL:3	-aa	-iko	-aa	-iko
3:3	-ee	-iko	-aa	-iko

Table 6: Direction markers in the conjunct order

A slight revision of the vocabulary item inventory, as well as further impoverishment rules may be needed in order to capture this.<sup>10</sup> The putative impoverishment rules<sup>11</sup> may end up being a pure stipulation because there is no principled way to account for the special status of 1SG<>3 and 2<>3SG constellations. Predications in which the direction markers disappear are unambiguous for the listener because the regular  $\varphi$ -agreement in the suffix slots is replaced by portmanteaus encoding exact argument configurations (Dahlstrom 1991; Wolfart 1973).

<sup>10</sup> The vocabulary item entries may be revised as follows:

- |   |   |
|---|---|
| i. { +subj -part } $\leftrightarrow$ /-iko/ (3.ERG)     | iv. { $\alpha$ part } $\leftrightarrow$ /-aa/ (ABS) |
| ii. { -subj +part +2 } $\leftrightarrow$ /-iti/ (2.ACC) |   |
| iii. { -subj +part } $\leftrightarrow$ /-i/ (1.ACC)     | v. { ... } $\leftrightarrow$ $\emptyset$            |

In this system, the theme suffixes /-aa/ and /-ee/ can be viewed as allomorphs of /-aa/, with the transition to /-ee/ happening in the independent order via a readjustment rule of the kind [+low]  $\rightarrow$  [-low] / \_\_\_ { -part } (i.e. the vowel is raised in the context of a third-person argument).

<sup>11</sup> ... which would simply delete case features on all arguments in SAP.SG<>3 configurations:

- |   |  |
|---|--|
| i. $\pm$ subj $\rightarrow \emptyset / \{ \{ \text{___} +\text{part} -\text{pl} \} \{ -\text{part} \} \}$ | ii. $\pm$ subj $\rightarrow \emptyset / \{ \{ +\text{part} -\text{pl} \} \{ \text{___} -\text{part} \} \}$ |
|---|--|

#### 4. Summary

The main purpose of this work was to investigate the grammatical phenomenon usually referred to as Inverse Morphology as it is observed in the Algonquian language Plains Cree. Just like many (or even most) other languages with complex verbal morphology cross-linguistically (e.g. Georgian, Hoocak, Mapudungun, Nahuatl, Swahili etc.), the Algonquian languages have polypersonal agreement: a bivalent verb agrees with both of its core arguments. Peculiar to this particular group of languages is the fact that most of the agreement affixes only reflect the respective arguments'  $\varphi$ -features (at least in the Independent Order), without saying anything about their syntactic role in the proposition. Combined with the relatively poor nominal morphology (no structural case) and free word order patterns, this creates a challenge that needs to be resolved by these languages' Linking mechanism.

This problem is solved by using what is traditionally called *theme*, or *direction*, markers. Inserted into a designated slot within the verb's morphological template, these affixes tell the listener whether the argument configuration in a predication is properly aligned with the salience hierarchy encoded in the respective language's grammar. If the agent of a transitive predication happens to be less salient than the patient, a special inverse marker indicates this mismatch.

After taking a close look at the conjugation paradigm found in Plains Cree, I claim that, in this particular language's morpho-syntax, there are no typologically exotic features. What surfaces in the direction-marking slot in the verbal paradigm is actually a fairly simple inventory of case markers. Each one of these markers refers only to one of the predication's core arguments, i.e. they are not portmanteau suffixes.

The fact that these case markers appear in atypical configurations has nothing to do with the presence of a special inverse feature in the system. This kind of behavior is found in many different languages including Spanish, Hebrew and others. The pattern of *Differential Case Marking* realizes morphological case on arguments which are deemed unexpected/atypical by the system based on an intrinsic salience hierarchy.

In PC, 1<sup>st</sup>- and 2<sup>nd</sup>-person arguments are considered more salient than 3<sup>rd</sup>-person actants; therefore, they are expected to serve as subjects (agents) in transitive predications. When this is not the case, they bear overt object markers. The opposite happens with 3<sup>rd</sup>-person arguments: they are normally expected to be the object. Should they show up in the agentive role, a subject marker is necessary, unless the object is overtly marked as being less salient than the subject.

This solution makes Plains Cree less typologically extreme than some might think it is. It does, indeed, pattern very neatly with many other languages that have global case splits. This is just another example of a system where the case split is based on a language-specific salience hierarchy. These effects can indeed be found in many various languages (see Georgi 2010), in both dependent- and head-marking phenomena. The pattern found in Plains Cree might seem odd at the first glance, but there is nothing about it that would really set it apart.

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## Abbreviations

1	first person exclusive	INV	inverse
12	first person inclusive	OBL	oblique
2	second person	OBV	obviative
3	third person	PART	participant
ABS	absolutive	PC	Plains Cree
ACC	accusative	PL	plural
AN(IM)	animate	PN	personal name
DCM	differential case marking	PROX	proximate
DEP	dependent	SAP	speech act participant
DIR	direct	SG	singular
DM	Distributed Morphology	TAM	tense, aspect and mood
DOM	differential object marking	VI	vocabulary item
ERG	ergative		
GOV	governed		

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## Wonder *if* embedded, know *whether* semi-question

Rudmila-Rodica Ivan

This paper investigates the differences between the clausal complements of *know* and *wonder* predicates and argues that while the former merges with straightforward [-Q] CPs, *don't know* and *wonder* merge with [+Q] embedded questions. Observations regarding embedded T-to-C, embedded *wh*-the-hell phrases and Q-particles are in support of the claim that *wonder*-verbs merge with cPs with extra [+Q] machinery which licenses the abovementioned phenomena. The paper also claims that (non-conditional) *if* bears a [+Q] feature, unlike its [-Q] counterpart, *whether*, and that the distribution of *if* / *whether* and Q-particles in embedded clauses can distinguish between semi-question / embedded question selecting predicates.

### 1. Introduction

#### 1.1. Outline

In general, the literature includes all *wh*-complements under the umbrella term of *embedded questions*. This paper argues that the embedded clauses in (1a) and (1b), while indeed similar in that they are both bearers of a [+wh] feature, are in fact not the same.

- (1) a. I wonder [who is in Ravenclaw].  
b. I know [who is in Ravenclaw].

The difference between the two types of embedded *wh*-clauses becomes apparent in Q-particle languages. One such language, as argued in Ivan (2013), is Romanian.

- (2) a. Mă întreb [cine (**oare**) e în Ravenclaw].  
me.ACC ask who **Q** is in Ravenclaw  
'I wonder who is in Ravenclaw.'  
b. Știu [cine (**\*oare**) e în Ravenclaw].  
know who **Q** is in Ravenclaw  
'I know who is in Ravenclaw.'

- c. Nu știu [cine (**oare**) e în Ravenclaw].  
not know who **Q** is in Ravenclaw  
'I don't know who is in Ravenclaw.'

What (2) illustrates is that the Romanian Q-particle, *oare*<sup>1</sup> which is typically licensed in [+Q] contexts, is grammatical in clauses embedded under both *wonder* and *don't know*. The fact that (2c) is perfectly acceptable is surprising since, as shown in (2b), *know* does not behave like its negated counterpart: inserting the Q-particle *oare* would lead to ungrammaticality. A similar contrast is found in English.

- (3) a. I wonder if Chomsky is a Gryffindor.  
b. \*I know if Chomsky is a Gryffindor.  
c. I don't know if Chomsky is a Gryffindor.

It seems that *don't know* and *wonder* also pattern alike in (3): *wonder* and *don't know* can merge with non-conditional *if*-clauses, *know* cannot<sup>2</sup>. These observations and others motivate the exploration of embedded questions, semi-questions and their licensing predicates. Consequently, the main contribution of this paper rests on a *syntactic* analysis of these phenomena based on data from English and Romanian. A secondary goal is to pinpoint *diagnostics* which determine whether a clause is a true embedded question or a so-called semi-question in these languages.

The first task is to explain what this paper means by 'semi-question' and the next subsection aims to do just that. The intuition is that *real* questions designate information gaps and are [+Q] feature bearers. As a brief preview, 'semi-questions' label embedded *wh*-clauses which already favor a certain answer, while embedded questions are not biased towards any one answer.

The second section serves as an overview of the theoretical background and discusses four main analyses. Groenendijk & Stokhof (1984)'s account of intensional and extensional predicates is compared to the rogative and responsive predicate types identified by Lahiri (2002). Another seminal account is that of den Dikken & Giannakidou (2002) who posit that question-embedding predicates select complementizers containing a silent Q operator. Lastly, the section discusses a recent take on embedded *wh*-clauses which comes from Turnbull-Sailor (2007) who claims that embedded questions are CPs, whereas semi-questions are DPs. In order to set the stage for discussion of potential diagnostics, this section ends with an extensive list of the predicates which select *wh*-interrogatives in English and Romanian.

The third section explores diagnostics for embedded and semi-questions and reiterates the observation that the sentences in (2) hint at, namely that factive predicates such as *know* merge with semi-questions when in affirmative assertions, but that they may also select embedded questions when preceded by negation or by a modal operator. The data discussed in this section is focused on *wh*-the-hell phrases in English and Romanian, embedded T-to-C in English and embedded Q-particles in Romanian.

<sup>1</sup>The optionality of *oare* in (2) is due to the fact that *oare* is also a discourse particle. For all intents and purposes, its behavior is typical of other Q-particles (it is only licensed in main or embedded questions, it forms indefinites and it is associated with focus (Cable 2007; Cheng 1991)), but the role it plays in discourse removes its 'obligatoriness'. I refer the reader to Ivan (2013) for arguments and data in favor of this view.

<sup>2</sup>The acceptability of (3b) improves if the speaker is immediately contradicting someone who utters: '*You don't know if Chomsky is a Gryffindor*'. Unlike for the other sentences in (3), the availability of this reading is discourse dependent, necessarily pragmatically licensed and (3b) is not felicitous in an out of the blue context.

The fourth section underlines the role played by negation in the selection of verbal complements following Laka (1990)'s account of negative complementizers in Basque and de Cuba (2007)'s take on the syntax of factive and non-factive predicates. This section also discusses the distribution of *if* and *whether* in embedded questions, ultimately making the claim that *if* requires a [+Q] licenser whereas *whether* does not. As the data discussed in this paper gives support to a marriage of the analyses of de Cuba (2007) for (non-)factive verbs and McCloskey (2006) for embedded T-to-C, I propose that *wonder* and *don't know* predicates pattern alike in that they both merge with CPs containing an interrogative operator, while *know* verbs merge with regular [-Q] CPs.

### 1.2. *To be or not to be a question: introducing semiquestions*

Before moving on to embedded questions and semi-questions *per se*, let us first consider what exactly a question is and what classifies as a question. Traditional grammar has long categorized utterances into declarative, imperative and interrogative sentences, sentence-type being reflected even in punctuation (. ! ?). However, questions go beyond the simple question mark. Questions can be asked in a variety of syntactic contexts and one should distinguish between interrogative sentences as a matter of syntax and questions as speech acts, as a matter of pragmatics.

For Åqvist (1975) and Hintikka (1981) a question is a type of epistemic request (a request for knowledge); when the Speaker asks a question, they are making an imposition on the Hearer. A similar perspective is that of Searle (1969) who takes questions to be a subpart of directive speech acts, the *essential condition* being that the Speaker is attempting to make the Hearer provide an answer. However, in other accounts (Bach & Harnish 1979; Chițoran & Cornilescu 1986; Șerbănescu 2002) questions are a separate class of speech acts wherein the main focus lies on the *informational gap* the Speaker is trying to fill. In terms of what a question is, pragmatically, I share the latter view: the relation between the Speaker and the Hearer is less relevant than the relation of the Speaker to the transmitted propositional content. To put it simply, a question arises whenever there is either a lack of knowledge or uncertainty with respect to a piece of information and it is not dependent on the existence of an actual *request* for an answer.

Starting with Baker (1968) and Cheng (1991), the syntax-semantics of questions has been claimed to be different than that of assertions. Cheng (1991) (and Baker (1968), to an extent) argues that interrogative sentences are licensed by a [+Q] feature of the complementizer, feature which may or may not be phonologically realized. This [+Q] feature types the clause (interrogative [+Q] as opposed to imperative/declarative [-Q]) and it semantically entails that there is a set of available possible answers.

- (4)
- a. Who is in Ravenclaw?
  - b. Is Chomsky in Ravenclaw?
  - c. I wonder who is in Ravenclaw.
  - d. I forgot whether Chomsky is in Ravenclaw.
  - e. I know who is in Ravenclaw.

As illustrated above, an information gap can be expressed both in main ((4a) and (4b)) and in embedded sentences ((4c) and (4d)), most of the the utterances under (4) representing various types of questions: *wh*-questions, yes/no questions and embedded interrogatives respectively.

While the embedded interrogatives in (4c) and (4d) are similar, the sentence in (4e) does not encode an information gap. On the contrary, *know* entails that the Speaker is familiar with and committed to the answer to the question in (4a). For this reason, den Dikken & Giannakidou (2002) claim that verbs like *know* select *semi-question* complements, and not full-fledged embedded questions. This claim is supported by the felicity of the sentence continuations below.

- (5) a. I know who won. It was Snape.  
 b. I don't know who won. #It was Snape.  
 c. I wonder who won. #It was Snape.  
 d. I forgot who won. #It was Snape.

What (5) illustrates is that the same speaker cannot felicitously continue a sentence denoting an information gap by giving an answer to that question. Once again, there seems to be a difference between *know*-type verbs and *wonder*, *don't know*-type verbs. The felicity of a question relies on the existence of a set of possible answers. If at the moment of utterance, the Speaker conveys that they have already chosen an answer like in (4e), the embedded clause is a semi-question.

## 2. When does a verb select a question?

This section takes a closer look at four different accounts of *wh*-complement clauses given in the literature: Groenendijk & Stokhof (1984), Lahiri (2002), den Dikken & Giannakidou (2002) and Turnbull-Sailor (2007), teasing apart the necessary tools and assumptions for the investigation of question-hood. This section also provides an inventory of *wh*-complement selecting verbs, illustrating the need for diagnostics aimed at differentiating embedded and semi-questions.

### 2.1. Intensional/extensional vs. rogative/responsive

Groenendijk & Stokhof (1984) distinguish between two types of *wh*-embedding verbs: verbs of the *extensional* type (such as *know* and *tell*) and *intensional* verbs (like *wonder* or *guess*)<sup>3</sup>. The crucial difference between the two types of predicates rests on their complements: extensional verbs are concerned with the denotation of the clause, merging with a *proposition*, whereas intensional verbs merge with functions of propositions. The intuition behind Groenendijk & Stokhof (1984) is that verbs like *know* and *tell* are concerned with the answer of the interrogative they embed, while verbs like *wonder* and *ask* are concerned with the question itself.

Along similar lines, Lahiri (2002) looks at the distribution of *wh*-complement clauses and distinguishes between *rogative* verbs which only embed *wh*-complements and *responsive* verbs, which may select both *wh*- and *that*-complements. Some examples of rogative predicates are *ask*, *wonder*, *depend on*, *investigate* and, like the intensional verbs of Groenendijk & Stokhof (1984), they are concerned with the question itself, not with the answer. Responsive predicates, on the other hand, are concerned with *one* proposition, namely the answer to the embedded interrogative sentence, and with the attitude of the speaker to that proposition.<sup>4</sup>

<sup>3</sup>According to (Groenendijk & Stokhof 1984: p. 84) the following verbs are intensional: inquisitive verbs: *ask*, *wonder*; verbs of conjecture: *guess*, *estimate*; opinion verbs: *be certain about*; verbs of relevance: *matter*, *care*; and verbs of dependency: *depend on*.

<sup>4</sup>Lahiri (2002) further categorizes responsive predicates into two classes: veridical-responsive (*know*, *remem-*

These seminal accounts illustrate both the need to distinguish between different clause-embedding predicate classes and the fact that this distinction is not exactly clear-cut. Work by Egré (2008) and Spector & Egré (2015) aims to further refine these categories. However, none of the abovementioned accounts are concerned with semi-questions and embedded questions *per se*: all *wh*-clausal complements are interrogative. According to Spector & Egré (2015) interrogative complements always assume the (true or partial) answer to the question they embed and all veridical attitude verbs are question-embedding. This line of investigation is more concerned with the semantic interpretation of these predicates and does not explore the impact that negation and other modal operators have on the embedded clausal complement.

## 2.2. *Wh-the-hell and Q-operators*

The effect that negation has on the [Q]ness of the embedded clause becomes apparent in den Dikken & Giannakidou (2002). In an investigation on the distribution of *wh-the-hell* phrases, den Dikken & Giannakidou (2002) observe that *wh-the-hell* is licensed in root questions (6a), embedded questions (6b) and in contexts like (6d) where a veridical predicate has been negated.

- (6)
- a. Who the hell stole the Marauders Map?
  - b. Filch wondered who the hell stole the Marauders Map.
  - c. Filch \*knew / \*realized who the hell stole the Marauders Map.
  - d. Filch didn't know / didnt realize who the hell stole the Marauders Map

The authors argue that *wh-the-hell* phrases should be considered polarity items, since they only appear to be licensed by a question operator, negation or other nonveridical triggers. Consequently, den Dikken & Giannakidou (2002) propose that only verbs like *wonder* and *ask* embed “real” questions because the complements of these verbs contain a silent Q operator (or a [+Q] feature) in their complementizer. According to den Dikken & Giannakidou (2002) verbs like *know* (or *forget*) supposedly lack this Q operator, since they select propositions, not questions.

The analyses discussed above generally rely on the same intuitions: there are predicates which merge with propositions (and which may express the subject's attitude to that proposition) and predicates which merge with sets of possible answers / propositions (‘real’ questions). The accounts do not make any claims regarding the syntactic differences of the *wh*-complements selected by *ask/wonder* verbs and *know/discover* predicates. Syntactic differences do come into play in Turnbull-Sailor (2007), the main ideas of which are sketched out below.

## 2.3. *Semi-questions as Free Relatives*

In his MA thesis, Turnbull-Sailor (2007) provides several diagnostics which separate the *wh*-selecting verbs into two classes: verbs that merge with [+wh] questions (*ask, wonder, inquire*) and verbs which select what Turnbull-Sailor (2007) calls “non-questions” (*know, discover*). He also argues that “non-questions”, or what I refer to as semi-questions, should be analyzed

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*ber, forget, tell, be surprised, etc.*), which express a relation to the true answer of the embedded interrogative, and non-veridical predicates (*be certain about, agree on, etc.*) which express a relation to a potential answer. Veridical-responsive predicates coincide with Groenendijk & Stokhof (1984) extensional-type verbs. I refer the reader to Anand & Hacquard (2014) for recent discussion on factivity, veridicality and how to draw the line between them.

as free relatives. Following den Dikken & Giannakidou (2002), one of the main diagnostics that Turnbull-Sailor (2007) employs to determine the split between the “*wonder*-class” and the “*discover*-class” is *wh*-the-hell licensing (see (6)). Turnbull-Sailor argues that other diagnostics are *what gives?* (which is also an aggressively D-linked polarity item), embedded T-to-C and clause fronting. Some of these diagnostics will be discussed in the following section.

What is striking about the analysis in Turnbull-Sailor (2007) is that *wonder*-verbs embed CPs (because they select questions) and *discover*-verbs embed DPs, since, according to Turnbull-Sailor (2007), they select free relative clauses. This might seem surprising, but the proposal that some embedded [+*wh*]-clauses should be interpreted as relative clauses is not new, having been suggested ever since Baker (1968) and Pană-Dindelegan (1976) for Romanian.<sup>5</sup> The claim that embedded CPs have DP structure has been made in the literature for various other constructions (see Kiparsky & Kiparsky (1970), Abney (1987), Kayne (1994) and others). However, while the claim that *discover*-verbs merge with DPs fits well within a certain body of literature, it might not be entirely motivated. According to Groenendijk & Stokhof (1984), den Dikken & Giannakidou (2002), Lahiri (2002) and Spector & Egré (2015), what Turnbull-Sailor (2007) qualifies as *discover*-predicates should select *propositions*, not property-designating sentences.

One established test in the syntactic literature aimed at distinguishing between *wh*-interrogatives and free relatives dates back to Ross (1967)<sup>6</sup>, who observes that *else* is licensed on *wh*-DPs in *wh*-interrogatives, but not in free relatives.

- (7)
- a. I wonder [<sub>WH-INT</sub> what Hermione conjured.]
  - b. I wonder [<sub>WH-INT</sub> what *else* Hermione conjured.]
  - c. I saw [<sub>FR</sub> what Hermione conjured.]
  - d. \*I saw [<sub>FR</sub> what *else* Hermione conjured.]
  - e. \*I know [<sub>FR</sub> where *else* she learned all that stuff].
  - f. I don't know [<sub>WH-INT</sub> where *else* she learned all that stuff].

What the sentences in (7) illustrate is that *wh-else* is grammatical in *wh*-interrogatives ((7b), (7f)). The examples above suggest that a distinction should be drawn between embedded interrogatives ((7a),(7b),(7f)) and relative sentences ((7c), (7d), (7e)). They also point towards the direction this paper is attempting to make, namely, that *don't know* (7f), as opposed to *know*, may merge with *wh*-interrogatives. Negation appears to affect the behavior of *discover*-class predicates: as in (6d), predicates like *don't know* license *wh*-the-hell phrases in the embedded interrogative, while their affirmative counterparts do no.

<sup>5</sup>Pană-Dindelegan (1976) claims that all *wh*-complements, even those of *wonder*-verbs, are what she calls ‘relative interrogative sentences’. She argues that *dacă* (‘if’ or ‘whether’) is a surface marker for an embedded total / polar question and that the sentence in (ib) is actually a gradual transformation of (ia).

- (i) Romanian relative interrogative sentences (adapted from Pană-Dindelegan (1976))
- a. El mă           întreabă [faptul dacă   pleci (sau nu)].  
he CL.2SG.ACC asks   fact.the whether go.2SG (or not)  
‘He asks me the fact whether you’re leaving (or not)’.
  - b. El mă           întreabă dacă   pleci.  
he CL.2SG.ACC asks   whether go.2SG  
‘He asks me whether you’re leaving’.

The claim that all *wh*-complements have DP structure rests on the relationship between (ia) and (ib), however, (ia), at least for me, is *not* grammatical and certainly not as acceptable as its counterpart.

<sup>6</sup>See Caponigro (2003) for more extensive diagnostics.

More proof that negation determines the structure of the complement of *discover*-predicates pertains to embedded T-to-C in certain non-standard varieties of English. The examples below are taken from (Turnbull-Sailor 2007: 41) and they are available in certain American English dialects.

- (8) Embedded T-to-C in non-standard American English
- a. \*The district attorney knew who had the police arrested.
  - b. ?The district attorney didn't know who had the police arrested.
  - c. The district attorney wanted to know who had the police arrested.
- (Turnbull-Sailor 2007: 41)

Crucially, free relative clauses do not exhibit T-to-C movement in either standard or non-standard varieties of English. For this reason, it would be unlikely for the embedded sentences in (8b) and (8c) to be free relative clauses, as Turnbull-Sailor (2007) claims. Hence, the Turnbull-Sailor (2007) approach leads to an undesirable distinction: one would have to argue that *discover*-predicates merge with DPs (free relatives) in affirmative contexts and CPs in non-assertive / non-veridical contexts. Although negation does seem to influence the type of complement a predicate may merge with, it is unlikely that it can change the actual category of the embedded complement.

The purpose of this subsection was to show that there is indeed a difference between clausal complements of *wonder*-verbs and *discover*-verbs. It is plausible that this difference is syntactic, but unlikely that the complement clauses differ to a great extent (DPs or CPs). It is nevertheless desirable that syntax can account, at least in part, for the existence of semi-questions. The rest of this paper will continue under the assumption that den Dikken & Giannakidou (2002) are on the right track: real embedded questions contain a [+Q] operator, while semi-questions do not.

#### 2.4. *Wh*-complement clauses embedding predicates

The various approaches to *wh*-complement embedding predicates overlap for some predicates and clash for others. Huddleston & Pullum (2005) provide a list of *wh*-interrogative selecting predicates (subsumed below) below. It should be noted that Huddleston & Pullum (2005) call all *wh*-complements 'interrogative' so the classes below are not directly sensitive to the notion of 'semi-question'.

- (9)
- a. verbs of asking – *ask, inquire, wonder, investigate*
  - b. verbs of knowing – *know, find out, remember, (be) certain, learn (forget)*
  - c. verbs of guessing – *guess, estimate, predict, judge*
  - d. verbs of telling – *tell, inform, point out, show*
  - e. verbs of deciding – *decide, determine, make up ones mind, agree*
  - f. verbs of dependence – *depend, have a bearing, influence, affect*
  - g. verbs of significance – *significant, care, matter, (be) important*
  - h. verbs of concerning – *concern about / as to / regarding*
  - i. verbs of surprise – *amaze, (be) amazed, (be) amazing, surprise*
  - j. verbs of disbelief – *doubt, (be) doubtful, question, (be) questionable*

According to Groenendijk & Stokhof (1984), out of the list provided by Huddleston & Pullum (2005), (9a), (9c), (9g) and *depend on* merge with embedded questions. According to Lahiri (2002), rogative verbs (actually question-embedding) are found in (9a). The distinction between responsive-veridical and non-veridical predicates is not evident in the list above (for instance, some predicates in (9b) and (9f) are veridical, some are not). *Discover*-class predicates, as described by Turnbull-Sailor, seem to include verbs of knowing (9b) and some verbs of deciding.

When it comes to Romanian, Şerbănescu (2002) puts together similar classes of predicates which can embed *wh*-interrogatives (see (10)). The predicate labels do not directly match those in Huddleston & Pullum (2005), but, overall, the *wh*-embedding predicates themselves overlap.

- (10)
- a. verbs of knowing / learning – *a întreba* ‘to ask’, *a şti* ‘to know’, *a-şi aminti* ‘to remember’, *a uita* ‘to forget’, *a afla* ‘to find out’, *a observa* ‘to observe’, *a descoperi* ‘to discover’, *a se informa* ‘to get informed’, *a fi preocupat de* ‘to be preoccupied with’, *a-şi da seama* ‘to realize’, *a-şi pune problema* ‘to wonder about’
  - b. verbs of opinion – *a fi sigur de* ‘to be sure about’, *a fi convins de* ‘to be certain that’, *a se îndoii de* ‘to doubt’, *a fi de mirare* ‘to be surprising’
  - c. verbs of relevance – *a fi relevant / important* ‘to be relevant / important’, *a conta* ‘to matter’
  - d. verbs of perception – *a auzi* ‘to hear’, *a vedea* ‘to see’
  - e. verbs of communication – *a spune* ‘to tell’, *a informa* ‘to inform’, *a telefona* ‘to telephone’, *a scrie* ‘to write’, *a şopti* ‘to whisper’, *a bombăni* ‘to mumble’
  - f. verbs of evaluation – *a ghici* ‘to guess’, *a estima* ‘to estimate’, *a se gândi* ‘to think’

The lists above are far from complete and I omitted some for the sake of space. In any case, the categories seem quite scattered (notice that *wonder* and *discover* verbs fall in the same category for Şerbănescu (2002)). More to the point, predicate classification is generally a messy and inexact affair which still leaves room for a lot of careful work to be done.<sup>7</sup> However, as it should be expected, the two lists have a great deal of overlap. It is intuitive that predicates which select embedded questions and/or semi-questions should be cross-linguistically more or less the same. Henceforth, Romanian and English are expected to pattern alike in terms of semantic and syntactic differences between embedded and semi-questions and their embedding verbs.

## 2.5. Summary

This section provided a brief overview of the work that has been done on distinguishing *wh*-embedding predicates from *that*-embedding predicates. While this is the main difference that the literature generally focuses on (Huddleston & Pullum 2005; Şerbănescu 2002), some approaches take the nature of the *wh*-clausal complement into account. Groenendijk & Stokhof (1984) differentiate between proposition-embedding verbs and verbs merging with functions of propositions and Lahiri (2002) clearly delimits question-embedding predicates (*wonder*) from predicates concerned with the answer (*know*). Turnbull-Sailor (2007) argues that the difference between *wonder* and *discover* verbs is syntactic in nature: these verbs merge with different syntactic objects (CPs and DPs, respectively).

<sup>7</sup>Once again, I refer the reader to Spector & Egré (2015) for recent work on veridical and factive verbs.

In classifying *wh*-embedding predicates, the accounts above do not focus on the differences between the clausal complements of *know* and *don't know* (or generally of factive verbs and their negated counterparts). The data discussed in this paper motivates the claim that *wonder*-predicates merge with [+Q] complements, whereas *know*-predicates merge with [-Q] complements and, moreover, that the complements of *don't know* pattern alike with those of *wonder*-predicates. Consequently, I follow the den Dikken & Giannakidou (2002) terminology: embedded questions are syntactically akin to root questions, semi-questions are [-Q] sentences. The next section provides diagnostics meant to distinguish between the two clause types and emphasizes the differences between complement clauses of *know* and *don't know*.

### 3. Questions vs. Semi-Questions: Data & Diagnostics

So far this paper has pointed towards associating embedded questions with informational gaps and that the main difference between embedded and semi-questions has to do with commitment to an answer out of the set of propositions. The previous section discusses the lexical semantics of the embedding predicates and what impact predicate type has on the complement clause of these predicates. This section provides evidence that lexical semantics is not the only factor in determining whether the *wh*-clause is an embedded or a semi-question. Negation and other non-veridical / [+Q] elements play a role. One of the main goals of this section is also determining diagnostics which should help in distinguishing between the two types of *wh*-embedded complements. An interesting note is that according to all of these diagnostics *don't know* and *wonder* both merge with embedded questions. Data coming from *wh*-the-hell phrases, embedded T-to-C and embedded Q-particles seem to converge towards one main conclusion: embedded questions are [+Q], while semi-questions are [-Q] environments.

#### 3.1. *wh*-the-hell phrases

As illustrated in the second section (2.2) *wh*-the-hell phrases are licensed in sentences embedded under *wonder* verbs (11a), in negated veridical predicates (11c) and, as in (11d) veridical predicates under the scope of modal operators.

- (11) a. The committee wondered [*who the hell* wrote the awful paper].  
 b. \*The committee discovered [*who the hell* wrote the awful paper].  
 c. The committee didn't discover [*who the hell* wrote the awful paper].  
 d. The committee will surely discover [*who the hell* wrote the awful paper].

Another aggressively non-D-linked *wh*-phrase which appears to distinguish between embedded questions and semi-questions is *what gives / what's up* (Turnbull-Sailor 2007). The examples in (12), show that *what gives / what's up* is only licensed in [+Q] contexts.

- (12) a. *What gives / what's up* with Greg's attitude?  
 b. I wonder *what gives / what's up* with Greg's attitude.  
 c. \*I know *what gives / what's up* with Greg's attitude.  
 d. \*We discussed *what gives / what's up* with Greg's attitude.

(Turnbull-Sailor 2007:11)

It does seem that *what's up* and *wh-the hell* phrases are licensed in both root questions and embedded questions. The sentences in (13) illustrates that, like *wh-the-hell* phrases, *what's up* is also grammatical in complement clauses of negated veridical predicates.

- (13) a. I don't know *what's up* with Dumbledore these days.  
 b. I didn't find out *what's up* with Dumbledore these days.  
 c. \*We didn't discuss *what's up* with Dumbledore these days.

Crucially, these two *wh*-phrases are not licensed by predicates which select semi-questions as in (11b) or (12c) and (12d), but they are grammatical in the same embedded *wh*-interrogative if the veridical predicates (*know*, *find out* but not *discuss*) are negated.

A similar test can be successfully developed for Romanian with *wh-naiba* 'wh-the heck' / *wh-dracu* 'wh-the devil' type phrases. While these phrases are perfectly grammatical in root questions as in (14a), they are not licensed under *a ști* 'to know' (14b), but they are grammatical in a clause embedded by its negated counterpart.

- (14) a. Cine naiba te ajută pe tine?  
 who heck.the 2SG.CL help ACC you.ACC  
 'Who the heck helps you?'  
 b. \*Știu unde naiba s-au dus (toți) banii.  
 know.1SG where heck.the REFL.CL -have gone (all) money.the  
 \*'I know where the heck (all) the money went.'  
 c. Nu știu unde naiba s-au dus (toți) banii.  
 not know.1SG where heck.the REFL.CL -have gone (all) money.the  
 'I don't know where the heck (all) the money went.'

Briefly put, the Romanian and English data is in favor of an analysis where aggressively D-linked *wh*-phrases are licensed in interrogative contexts. Furthermore, veridical predicates which cannot typically merge with embedded questions, can do so under negation.

### 3.2. Embedded T-to-C

Another reliable diagnostic is embedded T-to-C. Movement from T-to-C takes place in root object questions in English (15a); under Pesetsky & Torrego (2000) this is possible because the complementizer bears a [+EPP] uninterpretable Tense feature. While T-to-C does not take place in standard embedded questions (15b), varieties of English such as Belfast English ((15c) through (15f)) display overt T-to-C movement in embedded *wh*-interrogatives.

- (15) a. Who **did** you ~~did~~ see ~~who~~?  
 b. I wonder who you saw. / \* I wonder who **did** you see.  
 c. She asked who **had** I seen.  
 d. They couldn't understand how **had** she had time to get her hair done.  
 e. They didn't know which model **that** we had discussed.  
 f. I wonder what **should** we do.  
 g. \*Josh knew when **would** Maria leave.

The Irish English examples come from Pesetsky & Torrego (2000:16) and they clearly suggest that while in standard English the uninterpretable Tense feature of the embedded complementizer is [-EPP], in varieties like Belfast English it appears to be [+EPP], just like in matrix questions. Further embedded T-to-C phenomena can be found in McCloskey (2006), who also provides the examples below. The sentences under (16) again illustrate not only that there is a dichotomy between *wonder* and *know* predicates, but also that *wonder* and *don't know* seem to pattern alike in terms of licensing overt T-to-C movement. I take this as further proof that *don't know* embeds [+Q] *wh*-clauses.

- (16) a. \*I usually know who **might** they hire.  
 b. I wondered **was** he illiterate.  
 c. I don't know **was** it a priest or who went in there one time with a horse collar put over his neck.<sup>8</sup>

As above and in other examples given so far, the predicate *don't know* may also select embedded *wh*-interrogatives in which T-to-C is overt (16c). This suggests that *don't know* behaves quite similarly to predicates like *wonder* and that it might even embed real questions, despite the fact that its affirmative counterpart, *know*, embeds semi-questions. If this is true, it means that negation in the matrix clause plays a role in the complement selection of the predicate. Modal operators in the main clause have the same effect.

Unfortunately, Romanian does not illustrate T-to-C phenomena in main or embedded clauses so this diagnostic, although relevant for English, will not help with the distribution of embedded and semi-questions in non T-to-C languages.

### 3.3. Embedded Q-particles

One diagnostic that Romanian *can* make use of and English cannot has to do with Q-particles. Licensing embedded Q-particles is another point of divergence for embedded and semi-questions. As discussed in Ivan (2013), the Romanian Q-particle *oare* is only grammatical in root questions (17a) and (multiple) embedded questions.

- (17) a. **Oare** Chomsky e Gryffindor?  
 Q Chomsky is Gryffindor  
 'Is Chomsky a Gryffindor?'
- b. Mă întreb [dacă **oare** Chomsky e Gryffindor].  
 2SG.CL wonder.1SG if Q Chomsky is Gryffindor  
 'I wonder if Chomsky is a Gryffindor'.
- c. Nu știu [dacă **oare** Chomsky e Gryffindor].  
 not know.1SG if Q Chomsky is Gryffindor  
 'I don't know if Chomsky is a Gryffindor'.
- d. Știu [dacă (**\*oare**) Chomsky e Gryffindor].  
 know.1SG whether (**\*Q**) Chomsky is Gryffindor  
 'I know whether Chomsky is a Gryffindor'.

<sup>8</sup>This is quite a doozy of an example, but the main point is that T-to-C, namely, auxiliary raising, is possible.

The examples above illustrate that *oare* is grammatical in both (17b) and (17c), in *wh*-clausal complements of *wonder* and *don't know*, respectively, but ungrammatical in (17d) under *know*.

According to Cable (2007) and Hagstrom (1998), Q-particles can only be licensed in [+Q] contexts. Unsurprisingly, the Romanian Q-particle *oare* (Ivan 2013) is no different. It is not licensed in declaratives, imperatives or (free) relatives which are all [-Q] environments, but it is licensed in root and embedded questions ([+Q] environments). At this point, embedded Q-particles serve a twofold purpose: they are a diagnostic for embedded questions in the languages which have such particles and they confirm the [+Q]ness of embedded questions. Yet again, *don't know* and *wonder* pattern similarly.

Before moving on to the summary of the data discussed in this section, I would like to highlight the fact that embedded Q-particles are not grammatical under free relative clauses. As summarized in the second section, according to Turnbull-Sailor (2007), *know*-predicates merge with free relative clauses (DPs) and *wonder*-predicates merge with CPs. As embedded Q-particles are grammatical under negated *know*, this would force the proponent of this account to claim that *know* and *don't know* merge with different syntactic categories. The Q-particle data is a main reason why I argue against Turnbull-Sailor (2007) and propose a different approach.

### 3.4. Data and Diagnostics Summary

The data discussed in this section is visually summarized below. As the table in (18) illustrates, [+Q] environments, namely complement clauses of *wonder*-predicates all license embedded *wh*-the-hell phrases, embedded T-to-C movement and embedded Q-particles. Semi-questions, namely the [-Q] complement clauses of *know*-predicates, are on the opposite end of the spectrum. Due to the straightforward behavior of embedded questions and semi-questions with respect to these phenomena, I propose that embedded *wh*-the-hell, T-to-C and Q-particles be used as diagnostics to help distinguish between the two *wh*-clausal complements.

(18) [+Q] embedded, [-Q] semi-question

	ROOT CLAUSES		COMPLEMENT CLAUSES OF...		
	[+Q]	[-Q]	<i>wonder</i>	<i>don't know</i>	<i>know</i>
<i>wh</i> -the-hell	✓	X	✓	✓	X
T-to-C	✓	X	✓	✓	X
Q-particles	✓	X	✓	✓	X

What the table above also shows is that complement clauses of *wonder* and *don't know* pattern alike: they both pass the three diagnostics. While *know* does not license any of the phenomena discussed in this section, they are all perfectly grammatical under *don't know*. This should be sufficient proof that the lexical semantics of the embedding predicate cannot be the sole factor in determining the type of the complement *wh*-clause.

The following section presents yet another case in which negation seems to affect the syntax of the embedded clausal complement: Basque negative complementizers. Another point of interest is a comparison between English *if* and *whether*. Finally, section four sketches out the analysis proposed for the data discussed in this paper. The proposal is based on the treatment of factive and non-factive verbs in de Cuba (2007) and on the McCloskey (2006) account of T-to-C in embedded clauses.

## 4. Negation, ifs, whethers and proposal

## 4.1. Negation plays a role in complement selection

One of the claims of this paper is that negation in the main clause can have an impact on the syntax of the embedded clause. Such an example has been argued to be the case of operator licensed subjunctive (Quer (1998) apud Cornilescu (2003)). While the subjunctive is generally lexically licensed by the semantics of the predicate in the main clause, as in (19a), where the subjunctive is mandatory, it can also be licensed by an operator, as in (19c), where the use of the subjunctive is triggered by overt negation (compare (19c) to (19b), where the subjunctive is ungrammatical)<sup>9</sup>. Quer (1998) goes on to say that the examples under (19c) and (19d) illustrate what he calls ‘contrary to expectations subjunctive’ which can be licensed not only by overt negation, but also by predicates which entail uncertainty or negation, like *doubt*.

- (19) a. \*Voldemort ordered that Harry dies. / Voldemort ordered that Harry die.  
 b. Ron believes that Harry is here. / \*Ron believes that Harry should be here.  
 c. Ron doesn’t believe that Harry is here. / Ron doesn’t believe that Harry should be here.  
 d. Ron doubts that Harry is here. / Ron doubts that Harry should be here.

A similar case is that of negative complementizers in Basque. Based on observations regarding ‘inherently negative verbs’, Laka (1990) argues that the subjunctive mood is required in sentences headed by a negative complementizer. In this dissertation, Laka (1990) claims that the fact that verbs such as *deny* or *doubt* license negative polarity items in their embedded complements (see (20)) is due to the fact that these verbs select  $C_{NEG}$  complementizers which have carry the [+neg] feature.

- (20) a. McGonagall doubts [ that<sub>NEG</sub> anybody understood her explanation ].  
 b. \*McGonagall believes [ that anybody understood her explanation].

Naturally, this proposal parallels the notion of downward entailing contexts, but Laka (1990) claims that this is a syntactic affair due to the Basque data. While in English the two complementizers (positive and negative *that*) have the same phonological expression, languages like Basque overtly distinguish between two types of complementizers: *ela* is the equivalent of ‘affirmative’ *that*, while inherently negative verbs merge with *enik* headed clauses.

- (21) a. \*Iñigok ez du sinisten [ezerk eztanda egingo duela]  
 Iñigo no has believe [anything explode do-will that]  
 ‘Iñigo does not believe anything will explode’  
 b. Iñigok ez du sinisten [ezerk eztanda egingo duenik]  
 Iñigo no has believe [anything explode do-will that<sub>NEG</sub>]  
 ‘Iñigo does not believe anything will explode’

Furthermore, example (21b) shows that the negative complementizer *enik* is also licensed when the matrix clause contains sentential negation. This leads Laka (1990) to the conclusion that there are two types of *that*-complementizers in Basque and cross-linguistically: one that is se-

<sup>9</sup>The reader should note that these judgments are mainly based on British English and that ‘should’ is not a deontic modal in these examples.

lected by affirmative predicates and one which is selected by negative predicates. There are many possible counterarguments to this proposal (*enik* might just be a reflex of agreement, there are non-negative subjunctive complementizers cross-linguistically, etc.), but irrespective of the account, negation in the main clause does affect the syntax of the complement clause.

Nevertheless, the observations that Laka (1990) puts forth can point in the right direction when it comes to understanding why a verb like *know* can merge with either semi-questions or embedded questions, depending on whether it is negated or not. There is also a matter of how modal verbs and other non-veridical operators can affect the syntax of the embedded clause. It is perfectly plausible that the [+Q] in the embedded clause is not licensed by negation or modal verbs, but by some other magic in the main clause. This remains a puzzle to me for the remainder of this paper and I intend to address it in further research.

#### 4.2. *If vs. whether*

There is yet another case where negation plays a role in determining the complementizer of the embedded clause: *if* and *whether*. The real puzzle is that the distribution of *if* patterns with that of *wh*-the-hell, T-to-C and Q-particles in embedded clauses. As the examples in (22) show, while *whether* is grammatical in any of the sentences below, *if*-complements tend to be pickier.

- (22)
- a. It is relevant **whether** Hermione passed the exam (or not).
  - b. #It is relevant **if** Hermione passed the exam.<sup>10</sup>
  - c. It's not relevant **whether** Hermione passed the exam (or not).
  - d. #It's not relevant **if** Hermione passed the exam.
  - e. I know **whether** Hermione passed the exam.
  - f. \*I know **if** Hermione passed the exam.
  - g. I don't know **whether** Hermione passed the exam (or not).
  - h. I don't know **if** Hermione passed the exam.
  - i. I wonder **whether** Hermione passed the exam (or not).
  - j. I wonder **if** Hermione passed the exam.

As illustrated above, *if* is not grammatical under *be relevant*, be it in the affirmative or positive form. What (22) points out is that the distribution of *if* matches that of *wh*-the-hell and that it is related to a [+Q] marker, or, in any case, it can count as a diagnostic for predicates which select embedded questions. Furthermore, den Dikken & Giannakidou (2002) also notice that other veridical verbs like *admit*, *hear* (see the example in (23)) and *say* can only select *if* complements when they are negated or embedded under a Q operator. Once again, crucially, the reading aimed for in the examples below parallels that of *Rodica heard whether Hillary won the election*, and not the conditional reading: Rodica's hearing is not dependent on Hillary winning the election.

- (23)
- a. \*Rodica heard **if** Hillary won the election.
  - b. Rodica didn't hear **if** Hillary won the election.
  - c. Did Rodica hear **if** Hillary won the election?

<sup>10</sup>The only available reading is a *conditional* one: this is relevant only if Hermione passed the exam. Crucially, this is not the intended reading. The same conditional reading is possible in (22d).

Examples like (23) determine den Dikken & Giannakidou (2002) to view *if*-complements on a par with *wh*-the-hell phrases: both are polarity items. Since *if* is a complementizer, if predicates like *don't know* CAN merge with embedded questions, it is possible for English *if* to be a phonological realization of the Q-feature of these questions. If my assumptions are correct, *if*-complements may accurately distinguish between semi-questions and embedded questions. For instance, the verb *tell*, although it does generally merge with *wh*-complement clauses, these complements are real embedded questions ONLY when the *Speaker* is unaware of the answer to the question; when the *Speaker* is the one who lacks some relevant piece of information.

- (24)
- |  |  |
|--|--|
| a. *I told you <b>if</b> Hillary won.        | e. I told you whether Hillary won.         |
| b. *I didn't tell you <b>if</b> Hillary won. | f. I didn't tell you whether Hillary won.  |
| c. *You told me <b>if</b> Hillary won.       | g. You told me whether Hillary won.        |
| d. You didn't tell me <b>if</b> Hillary won. | h. You didn't tell me whether Hillary won. |

The examples above parallel the *if*-complements with the *whether*-clausal complement versions. While *whether* is grammatical in any of the sentences above, only (24d) licenses *if*. It seems that the reason for ungrammaticality has to do with the *knowledge* of the speaker. In any case where the speaker seems to have the answer to the question of *whether Hillary won*, *if*-complements are not grammatical.

- (25)
- |   |   |
|---|---|
| a. I'm not sure <b>if</b> this is right.        | e. *I'm sure if this is right.            |
| b. I didn't investigate <b>if</b> this is true. | f. I investigated <b>if</b> this is true. |
| c. #It bothers me if you left.                  | g. #It doesn't bother me if you left.     |
| d. I didn't notice <b>if</b> she left.          | h. *I noticed if she left.                |

In the case of the utterances in (25), they seem to be able to accurately pinpoint to which predicate (and predicate form) may embed actual questions. It seems that *be sure* does not, but its negated counterpart does; *investigate* behaves like *wonder*; *bother* only embeds semi-questions in any of its forms; and *notice* behaves like *know*. However, as shown in (24), *perspective* seems to play a role as well. As I have generally been very sneaky and tried to use 1st person subjects, all of these predicates might behave differently when the subject is in a different person (especially if the subject is third person, but the speaker is somehow omniscient). I leave the task of testing for each person subject of each predicate of interest for future research.

In any case, the data in this subsection motivates the claim that *if*-complements could serve as yet another a diagnostic for *wh*-interrogative embedding predicates. Compare (25) to (26).

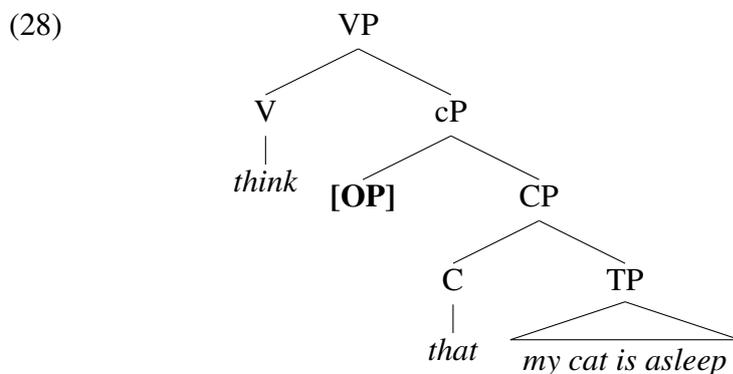
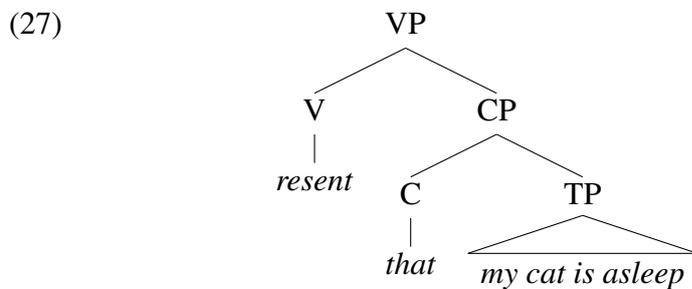
- (26)
- |   |  |
|---|--|
| a. I'm not sure <i>who the hell</i> is right.     | e. *I'm sure <i>who the hell</i> is right.         |
| b. I didn't investigate <i>who the hell</i> left. | f. I investigated <i>who the hell</i> left.        |
| c. #It bothers me <i>who the hell</i> left.       | g. #It doesn't bother me <i>who the hell</i> left. |
| d. I didn't notice <i>who the hell</i> left.      | h. *I noticed <i>who the hell</i> left.            |

The *wh*-the-hell phrases in (26) parallel the *if* clauses (25) in that they are licensed in the same environments. Should the proposal hinted at so far be correct, the distribution of *if* and *wh*-the-hell phrases can be accounted for in terms of which complements are actual [+Q] CPs.

## 4.3. De Cuba (2007) and (non)-factive predicates

In effect, the subsection above highlighted differences between factive and semifactive predicates in terms of their *wh*-clausal complements. This terminology goes back to Kiparsky & Kiparsky (1970) who distinguish between predicates which presuppose the truth of their sentential complements (*factives*) and predicates which do not presuppose the truth value (*non-factives*). In order to account for the semantic difference between the two types of predicates, Kiparsky & Kiparsky (1970) propose that factive verbs select an NP whose head is *fact* and whose complement is the CP itself. However, de Cuba (2007) argues that non-factive complements are the ones which are syntactically more complex, not the other way around.

In his dissertation, de Cuba (2007) defends the following analysis: non-factive verbs select for an intermediate *cP* projection, while factive verbs select for a CP directly. He argues that new information is marked both semantically, with an operator, and syntactically, with a syntactic functional projection *cP*, while ‘familiar’ information is given by the CP structure.



The derivations above illustrate the claim that de Cuba (2007) puts forth: factive verbs (27) merge with CPs, non-factive verbs (28) merge with intermediate *cP*s which also include an operator. According to de Cuba (2007) this semantic operator “remove[s] the speaker from responsibility for the truth content of the lower clause” (de Cuba 2007: 49), and may license negative polarity items and irrealis contexts.

Furthermore, following Hegarty (1992), de Cuba (2007) argues that since semifactive predicates (such as *know*, *be aware*) could select either a ‘familiar’ or a ‘novel’ complement, they merge with a CP or a *cP*, respectively.<sup>11</sup> What is more, de Cuba (2007) agrees with McCloskey

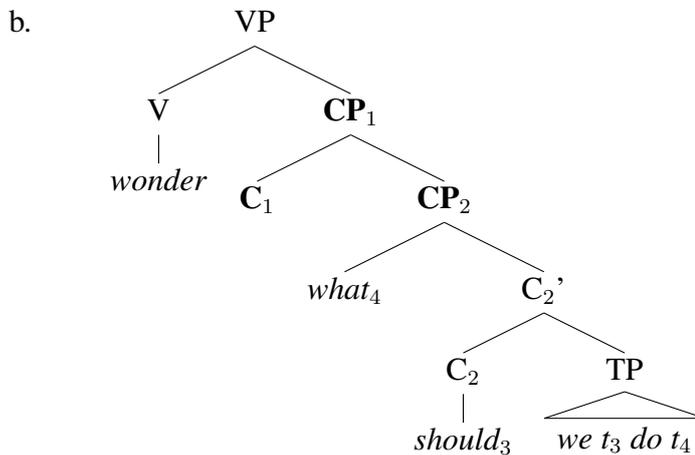
<sup>11</sup>de Cuba (2007) replaces the nonfactive factive terminology with the classes NCP and FCP.

Novel Complement taking Predicates (NCPs): *believe*, *think*, *say*, *claim*, *assert*, *allege*, *declare*, *state*, *propose*, *suggest*, *assume*, *suppose*, *conjecture*, *suspect*, *consider*, *imagine*, *be likely*, *be possible*;

Familiar Complement taking Predicates (FCPs): *notice*, *point out*, *realize*, *recognize*, *forget*, *admit*, *regret*, *know*, *remember*, *conclude*, *learn*, *find out*, *inform*, *agree*, *accept*, *insist*, *stress*, *hate*, *like*, *be aware*, *be proud*.

(2006) that the structure for *wonder/ask* predicates is similar to the one one in (29). The arguments that McCloskey (2006) offers in favor of the existence of CP-shells come from the embedded T-to-C data discussed in the previous section.

(29) a. I wonder what should we do.



In both these accounts, the underlying idea is that there is an extra functional CP layer which either introduces an operator, or licenses further movement. In light of the parallels between his account and that of McCloskey (2006), de Cuba (2007) concludes that *wonder/ask* predicates and non-factive / novel complement taking predicates merge with their arguments in the same way. In any case, *wonder* and *ask* are non-factive verbs so they should, by all means, be represented as in (28), like *think*.

#### 4.4. Proposal

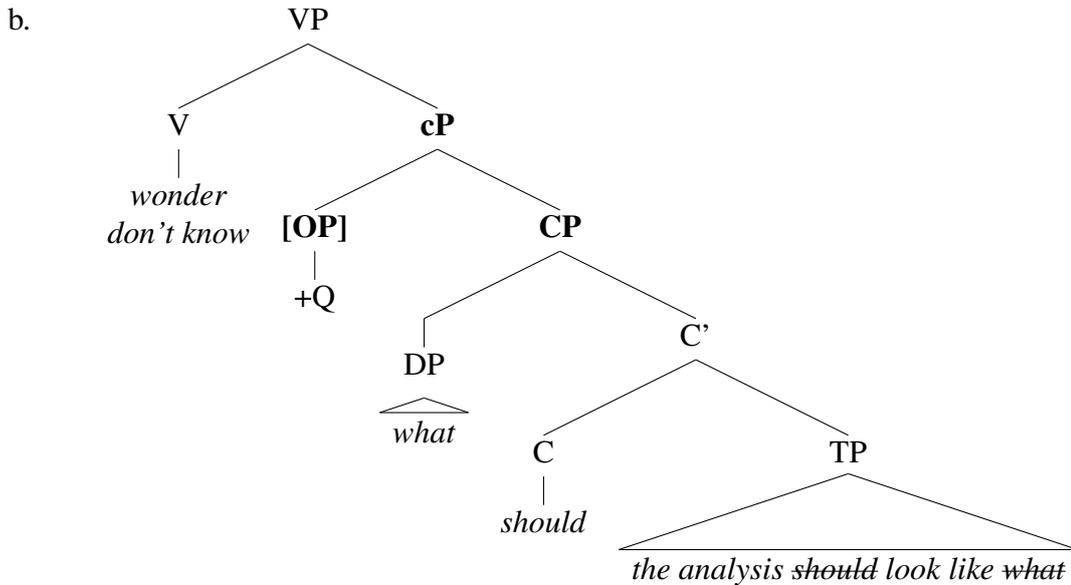
In light of the similarities between non-factive predicates and *wonder*-class verbs, the present proposal extends the de Cuba (2007)-style analysis of non-factives. The data in this paper has all pointed in the same direction: embedded questions are [+Q], semi-questions are [-Q]. I posit that this [+Q] feature is encoded by the operator within cP. The [+Q] is responsible for licensing embedded Q-particles, *wh*-the-hell phrases and embedded T-to-C movement (the latter is represented in (30), on the following page).

It appears that the [+Q]ness of a clause rests within this extra functional layer, cP. If de Cuba (2007) is on the right track in that factive predicates embed CPs directly and they are not syntactically able to merge with intermediate cP phrases, then an immediate outcome is that factive predicates cannot embed [+Q] questions. This is, obviously, a desirable consequence. Factive verbs like *know* cannot felicitously merge with clauses containing *wh*-the-hell phrases, Q-particles, embedded T-to-C, or, as recently discussed, *if* complementizers.

The data in this paper has also shown that negated factive verbs behave differently from their affirmative counterparts. Mainly, *don't know* patterns like *wonder*-verbs, whereas *know* is a typical factive verb. Consequently, it seems to be the case that *wonder* and *don't know* both merge with intermediate cPs, while *know* cannot. How exactly this difference comes about is still unclear to me. Remember, *know* also licenses [+Q] phenomena when under modal verbs, in question environments and in general non-veridical contexts. I am not, by any means, claiming

that *don't know* and *know* embed different syntactic objects due to some lexical difference. Instead, I assume that the polarity of the main clause, when it comes to factive verbs, influences the polarity of the embedded clause as well. What mechanism is responsible for this, however, is left for future discussion.

(30) a. I wonder/*don't know* what the analysis should look like.

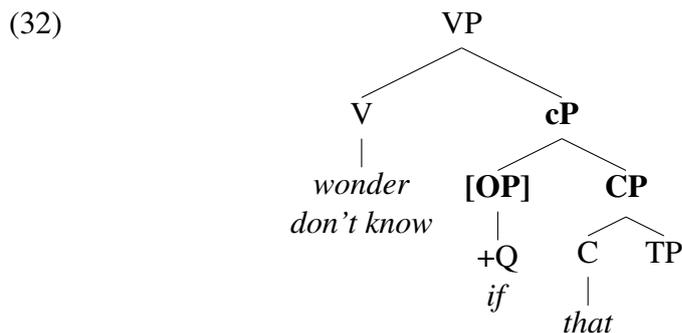


The underlying intuition behind the representation in (30) is that *wonder* and *don't know* embed the same type of syntactic complement. When the embedded question is a yes/no question, *if* can get phonologically realized in the operator position. When the embedded question is a *wh*-question, *wh*-phrases can move to SpecCP.

The observation that *know* type predicates cannot embed *if*-complements is captured through the claim that *if* is a phonological realization of the Q-operator (or, at the very least, *if* is a complementizer licensed by this operator). A puzzling example which gives credibility to this line of reasoning comes from Colorado Plains English.

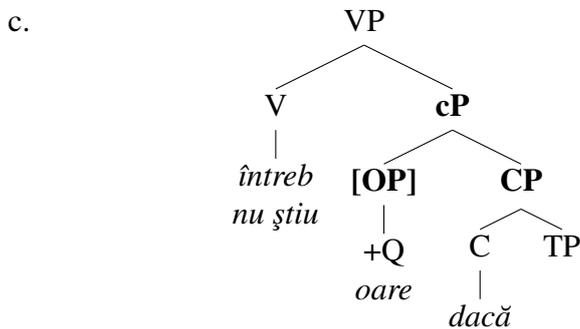
(31) Colorado Plains English (de Cuba 2007:65)  
 One time a guy from Arkansas or Kentucky asked me **if that** what kinds of peas those were.

The proposal sketched out in this paper can capture the availability of the two complementizers. *If* is realized under the [+Q] operator and *that* is spelled out under C.



This account also motivates the availability of embedded Q-particles. Romanian sentences like the ones in (33) mimic the pattern found in (31). The Q-particle<sup>12</sup> may co-occur with either *wh*-phrases or complementizers.<sup>13</sup>

- (33) a. Mă           întreb   [ (**oare**) când a absolvit Hermione].  
 2SG.CL.ACC ask.1SG [ **Q**    when has graduated Hermione]  
 ‘I wonder when Hermione graduated’.
- b. Nu știu       [ (**oare**) **dacă** a absolvit deja].  
 not know.1SG [ **Q whether** has.3SG graduated already]  
 ‘I dont know if she graduated already’.



In the derivation of the sentences in (33), the Q-particle would take its place under the operator, while the complementizer *whether* would be realized under C, like in (32). Of course, this predicts that there should be some dialects of English where an *if whether* construction is available. I have yet to find such examples. In any case, it seems that *if* and the Romanian Q-particle *oare* pattern alike in the sense that they are only licensed in [+Q] environments, while *whether* and *dacă* can surface in both [+Q] and [-Q] contexts. This is yet another reason for placing *whether*, *that* and *dacă* under the typical complementizer head.

## 5. Conclusions

Observations regarding embedded T-to-C, embedded *wh*-the-hell phrases and Q-particles led to the proposal that factive *know* merges with straightforward [-Q] CPs – semi-questions, whereas *don't know*, similarly to *wonder*, merges with cPs with extra [+Q] machinery – embedded questions. The availability of this [+Q] operator is responsible for the data, licensing embedded T-to-C in English, embedded Q-particles in Romanian and *wh*-the-hell phrases in both languages. Furthermore, unlike the main strands in the literature, not all responsive/extensional predicates are created equal: some of them (like *forget*, *remember*, *find out*, *discover*) may select either embedded questions or semi-questions depending on the syntactic structure of their clause.

Another main point has to do with (non-conditional) English *if*, which I argue bears a [+Q] feature, unlike its counterpart, *whether*. I claim that the distribution of embedded *if/whether* is

<sup>12</sup>The Q-particle *oare* is flexible in terms of where in the sentence it can surface. This is due to the fact that it is associated with the focused element and may either be spelled-out in its vicinity, or at the beginning of the clause. For more details see Ivan (2013).

<sup>13</sup>Jeroen van Craenenbroeck has also argued for double complementizers in some dialects of Dutch (Craenenbroeck 2004). Like in English, the order is that of ‘*if that*’. I thank Marlijn Meijer for pointing this out to me.

yet another diagnostic for embedded questions, much like *wh*-the-hell phrases, Q-particles and embedded T-to-C movement.

Naturally, plenty unresolved questions remain. How high in the tree is this [OP]? How does it relate to the left periphery of Rizzi (1997)? Could it be under Force<sup>0</sup> in the extended periphery, typing the clause and accounting for cases like (31) and (33)?

The focus of this paper has been that of providing a *syntactic* account for mainly semantic phenomena. In so doing, I did not address what the semantic contribution of this [+Q] operator might be, nor did I talk about the semantic derivations and computations. Most importantly, I did not delve into *why* negation, modal verbs and main sentence polarity affect the polarity of the embedded clause, nor did I test whether there is a connection with downward-entailing environments. Despite these shortcomings, the paper addressed an important issue: distinguishing between types of embedded *wh*-clauses and providing diagnostics for doing so. This is not only relevant for understanding embedded questions in general, but also crucial for the literature on *wh*-embedding predicates. I end this paper with the hope that, in due time, all of these remaining (quite burning) questions will be addressed.

#### *Acknowledgements*

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#### *Abbreviations*

1SG	First Person Singular
2SG	Second Person Singular
3SG	Third Person Singular
ACC	Accusative
CL	Clitic pronoun
Q	Q-particle
REFL	Reflexive

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# The Syntax of the Mandarin Chinese Adpositional Imperfective

Adina Williams

This paper proposes a new syntactic analysis of the Mandarin *zài* progressive, based on the argument that imperfectives and spatial adpositions share a core semantic relation. First, I argue that *zài* is always a locative adposition, based on cross-linguistic diagnostics (Svenonius 2004), distributional evidence, and a novel Mandarin ‘right’-modification test. Then, I show how a unified Figure-Ground semantics for locative adpositions (Talmy 2011, 1978; Svenonius 2006, 2004) can be used to derive the progressive interpretation. Adopting a unified Figure-Ground semantics offers a potential explanation for why some languages encode imperfective aspect using locative adpositions, as opposed to verbal aspectual markers.

## 1. Introduction

In many different languages, imperfective semantics are encoded using the same phonological form as the locative (i.e. spatial or temporal) adposition (Comrie 1976; Bybee et al. 1994). Because the form of the adposition is used to encode imperfective meaning, I dub this phenomenon “the adpositional imperfective” construction. For example, an adpositional imperfective is present in Basque (Laka 2006), Chol (Coon 2010, 2013a,b), Dutch (Comrie 1976; Boogaart 1991), German (Barrie & Spreng 2009), Icelandic (Thrainsson 2014/1979; Jóhannsdóttir 2011; Wood 2012), Japanese (Y. Oseki, p.c.), Jingpo (V. Zu, p.c.), Měibengokre (Salanova 2007), Scottish Gaelic (Reed 2012), English (Bolinger 1971a,b; Nagano 2014; Kayne 2015; Yang 2015), and (arguably) Mandarin Chinese.

Languages like those above have locative adpositions that can take spatial locations (e.g. ‘the park’, ‘Beijing’, ‘my favorite restaurant’, etc.) as their complements, as in (1)-(3).

- (1) *Zhāngsān zài gōng yuán tí qú* *Mandarin Chinese*  
Zhangsan at public park kick ball  
(PRS.) ‘Zhangsan is at the public park, playing ball.’  
(HAB.) ‘Zhangsan plays ball in the park.’

- (2) *Ich bin an der Tür* German  
 1PS be.PRS at the door  
 ‘I am at the door.’
- (3) *Taro-ga gakko-de benkyo-suru* Japanese  
 Taro-NOM school-at study-do.PRS  
 ‘Taro is at school studying.’

These adpositions can also take nominals that encodes a span of time (e.g. ‘3 o’clock’, ‘the time when my mom was cooking dinner’, ‘Monday’, etc.) as their complements, as in (4)-(6).

- (4) *zài sān-dǎn, wǒ tí le qú* Mandarin Chinese  
 at 3-CLF I kick ASP<sub>perf.</sub> ball  
 ‘At 3pm, I played ball.’
- (5) *Am Montag hast du die Uhr repariert* German  
 at-the Monday have 2PS the clock repair.PTPC  
 ‘You repaired the clock on Monday.’
- (6) *Gakko-ga 3-ji-de ow-arū* Japanese  
 School-NOM 3-CLF-at end-PRS  
 ‘School ends at 3 o’clock.’

Crucially, this same form, which has served as a temporal and a spatial locative adposition, can also be used to encode imperfective meaning in these languages, as in (7)-(9).

- (7) *wǒ zài tí qú* Mandarin Chinese  
 1PS at kick ball  
 ‘I am playing ball.’
- (8) *Ich bin am Lernen* German  
 1PS be.PRS at-the learn.INF  
 ‘I am learning.’
- (9) *Taro-ga hon-o yon-de-iru* Japanese  
 Taro-NOM book-ACC read-at-be.PRS  
 ‘Taro is reading.’

In order to investigate the adposition imperfective more closely, I will take Mandarin Chinese as a case study. After encountering the data above, the next logical question is whether there is one element *zài* in the lexicon that instantiates all of these functions, or whether there are multiple. If there is only one, then there must also be a single meaning that underlies all of the above uses of the term. But, what might this be? For temporal adpositional phrases, they ensure an interval of time overlaps with another interval of time. Spatial adpositional phrases ensure the spatial extent of one entity overlaps with the spatial extent of another. Imperfective aspectual elements situate an interval (i.e., the runtime of a event in progress) within a larger interval that extends into the future, leaving out initial and final subintervals (Dowty 1977, 1979; Landman 1992; Krifka 1992; Smith 1997; Klein 1994; Portner 1998; Hallman 2009), ensuring that the two intervals of time properly *overlap*.

Looking at the contribution of *zài* in all these cases, there is one semantic component that is shared: *zài* encodes an *overlap* relation between two elements of the same semantic type. If *zài* is an adposition, then we can rely on prior analyses of the argument structure analyses of locative adpositions (Svenonius 2006, 2004) that apply the notion of Figure-Ground predication (Talmy 2011, 1978; Stowell 2007; Demirdache & Uribe-Etxebarria 2000, 2004; Hale 1986) to predicative locative adpositions. Under these analyses, locative adpositional sentences consist of a Pred. which introduces the Figure and relates it to the Ground (Talmy 1978). In the case of Mandarin *zài*, I take the relevant relation to be *overlap*. The reasons for this will be discussed in more detail in §3.

Since Figure-Ground semantics can be present in multiple syntactic domains (e.g., locative adpositions, tense, Stowell 2007; Demirdache & Uribe-Etxebarria 2000, 2004), the question arises: what is *zài*'s syntactic category? There is a unified semantic core, but is there unified syntactic behavior as well? This question has sparked a very contentious debate in the Mandarin literature which has raged for the past 50 years (Chen 1978; Smith 1991; Li 1993; Klein et al. 2000; Lin & Liu 2004; Huang et al. 2009; Liu 2009; Chao 1968; Li & Thompson 1974, 1989; Ross 1991; Chan 1980; Woo 2010, 2013); consensus has yet to be reached. Thus, I will devote a portion of this paper to arguing for a locative adposition account for *zài*. If *zài* is a locative adposition, and locative adpositions encode Figure-Ground relations cross-linguistically (Myler 2014; Svenonius 2006, 2004), then *zài* thus encodes a Figure-Ground relation (i.e., *overlap*).

The layout of this paper is as follows. After arguing that *zài* is always an adposition (§2), I show that the progressive interpretation falls out from a theory of locative adpositional argument structure built on Figure-Ground semantics, supplemented with the assumption that the adposition takes a null eventive nominal as its complement (§3). Finally, §4 concludes. This work has consequences for the analysis of adpositional imperfectives more broadly, since it gives an argument structure analysis for at least one type of adpositional progressive. It also has consequences for the semantics of the progressive aspect, since it shows that a lexical item can encode an isolated semantic sub-component of the meaning of the progressive (i.e., *overlap*).

I take as background the minimalist program (Chomsky 1995), updated with the Distributed Morphology framework, following Halle & Marantz (1993) and subsequent works. I adopt a 'T/Y' architecture of the grammar under which all structure-building is done in the syntax. Categorizing heads assign a syntactic category feature to category-free 'roots,' bundles of abstract features that later receive meaning and phonological form at the interfaces.

## 2. The category of *zài* — Adposition

### 2.1. Mandarin-internal arguments that *zài* is a locative adposition

Echoing the cross-linguistic debate on the status of category P (see Baker 2003), the Mandarin Chinese literature takes adpositions to be one of the most poorly defined syntactic categories. Often the distinction between adpositions and verbal/aspectual categories is unclear, because Mandarin has very little affixal morphology that could be used to distinguish verbs from adpositions. Also, many adpositions in Mandarin are etymologically related to verbs (Huang et al. 2009:26), and exhibit stereotypically verbal behavior, like acting as the main sentential predicate (Huang et al. 2009:28). Most authors leave aside its modificational use (with Wu 2015 as a notable exception), positing a homophony between *zài* as adposition and *zài* as an aspectual

marker (Chen 1978; Li 1993; Klein et al. 2000; Lin & Liu 2004; Liu 2009; Huang et al. 2009). Some of the identities ascribed to aspectual *zài* in the literature are summarized below:

- Imperfective aspectual marker or particle (Chen 1978; Smith 1991; Li 1993; Klein et al. 2000; Lin & Liu 2004; Huang et al. 2009; Liu 2009)
- Verb or Co-Verb<sup>1</sup> (Chao 1968; Li & Thompson 1974, 1989; Ross 1991)
- Preposition (*this work*, Chan 1980; Woo 2010, 2013)

In order to claim that *zài* is an adposition, we should take a closer look at how adpositions work in Mandarin. Mandarin adpositions are not syntactically uniform (McCawley & Ma 1992; Li & Thompson 1974); there are two main subtypes of adpositions (Wu 2015), which are separated based on syntactic distribution (i.e., whether they are pre- or post-verbal), as in (10).

- (10) Subject + [ Prep<sub>high</sub> (+ Noun Phrase) + Prep<sub>low</sub> ] + (Verb Phrase)
- (11) *tā [cóng mén hòu] xià wǒ* Wu 2015:(17a)  
 3PS from<sub>PP-high</sub> door behind<sub>PP-low</sub> scare 1PS  
 ‘He scared me (by jumping out) from behind the door.’
- (12) *shū [zài shū-gǔi shàng / lǐ / páng]* Wu 2015:(9b-d)  
 book(s) at<sub>PP-high</sub> book-shelf [on<sub>PP-low</sub> / in<sub>PP-low</sub> / by<sub>PP-low</sub>]  
 ‘The book is [on / in / by] the shelf.’

The post-verbal ones share some characteristics with nominals and are lower in the extended PP domain (Wu 2015); they consist of configurational elements like *qián* ‘front’, *shàng* ‘on’, *xià* ‘under/below’, *hòu* ‘back/behind’, *lǐ* ‘in’, *wài* ‘out’, *páng* ‘by/near’, and *zhōng* ‘middle’. The pre-verbal ones are often called ‘localizers’, and are higher in the left periphery of PP (Wu 2015). There are fewer elements which fall into this class (Wu 2015)<sup>2</sup> *zài*, *cóng* ‘from’, *wáng* ‘towards’, *xiàng* ‘towards’, *gēn* ‘with’, *dùì* ‘to’. Canonical adpositional phrase constructions in MC have both a pre- and a post-verbal adpositional marker, as in (11). Since *zài* falls between the subject noun phrase and the verb as in (12), I will follow (Cheung (to appear); Huang et al. 2009; Li & Thompson 1974, i.a.) in calling it a high PP, and consequently focus on high PPs.

To verify that these pre-verbal elements are adpositions, I show that they cannot host aspectual markers (Svenonius 2004) (see 2.2 for more discussion of the Svenonius Generalizations):

- (13) \* *Zhāngsān cóng le / guò / zhe túshūguǎn lái*  
 Zhangsan from ASP<sub>perf.</sub> / ASP<sub>perf.</sub> / ASP<sub>imperf.</sub> library come  
 (int.) ‘Zhangsan was coming / came from the library.’
- (14) \* *Zhāngsān wàng le / guò / zhe túshūguǎn qù*  
 Zhangsan towards ASP<sub>perf.</sub> / ASP<sub>perf.</sub> / ASP<sub>imperf.</sub> library go  
 (int.) ‘Zhangsan was going / went towards the library.’

<sup>1</sup>The term “co-verb” was historically a typologically-relevant descriptive one that was used when an element could not be unambiguously diagnosed as a verb. Using “co-verb” as a syntactic category label has largely fallen out of fashion, especially in the minimalist framework under which concerns of parsimony drive us to minimize the number of possible syntactic category labels (Chomsky 1995).

<sup>2</sup>By some estimations, there is at least one more, *gěi*, which is used to form ditransitives, and also can stand alone with the interpretation of ‘give’. We will set this one aside for the moment.

- (15) \* *Zhāngsān xiàng le / gùo túshūguǎn qù*  
 Zhangsan facing-towards ASP<sub>perf.</sub> / ASP<sub>perf.</sub> library go  
 (int.) Zhangsan went towards the library<sup>3</sup>
- (16) \* *Zhāngsān zài le / gùo / zhe kàn shū*  
 Zhangsan at ASP<sub>perf.</sub> / ASP<sub>perf.</sub> / ASP<sub>imperf.</sub> read book  
 (int.) ‘Zhangsan was/is reading.’

Another test for adposition-hood in Mandarin is topicalization (Huang 1999). Mandarin adpositions can be topicalized, if the speaker is foregrounding certain information (translations adjusted to reflect the semantic contribution of topicalization):

- (17) *wǒ gēn Zhāngsān hěn chù-de-lái* Huang (1999:(11a))  
 1PS with Zhangsan very get-along  
 ‘I get along well with Zhangsan.’
- (18) *gēn Zhāngsān wǒ hěn chù-de-lái* Huang (1999:(11b))  
 with Zhangsan 1PS very get-along  
 ‘With Zhangsan, I get along well.’
- (19) *Zhāngsān duì Lisi hěn kèqǐ* Huang (1999:(12a))  
 Zhangsan to Lisi very polite  
 ‘Zhangsan is very polite to Lisi.’
- (20) *duì Lisi Zhāngsān hěn kèqǐ* Huang (1999:(12b))  
 to Lisi Zhangsan very polite  
 ‘To Lisi, Zhangsan is very polite.’
- (21) *wǒ zài zhūozi shàng bǎi le yì pén huār* Huang (1999:(13b))  
 1PS at table on set ASP<sub>PRF.</sub> one pot flowers  
 ‘I set on the table a pot of flowers.’
- (22) *zài zhūozi shàng wǒ bǎi le yì pén huār* Huang (1999:(13c))  
 at table on 1PS set ASP<sub>PRF.</sub> one pot flowers  
 ‘On the table, I set a pot of flowers.’

For temporal uses of *zài*, similar topicalization options are available for (21) and (22). However, such topicalizations are not possible for *zài*-phrases when there is no overt complement.

- (23) ?\* [*zài* ∅] *Lisi kàn shū*  
 at ∅ Lisi read book  
 (int.) ‘Lisi is reading’  
 (lit.) ‘At Lisi reading.’

I do not take this piece of evidence to argue against an adpositional account of *zài* for two reasons. First, topicalization could fail in (23) for reasons that are independent of category; perhaps it is just anomalous to topicalize a PP that has a phonologically null nominal as its complement. Secondly, topicalization has discourse and information theoretic consequences. It is unclear what sort of interpretation could motivate topicalizing *zài*-∅. Based on the examples above, *zài* passes the topicalization test for adposition-hood.

<sup>3</sup>Missing from this example is the imperfective aspectual marker *zhe*. This marker happens to be acceptable with *xiàng*, for reasons that are unknown and presumably outside the scope of this project.

The final argument that *zài* is an adposition comes from modification by a degree specifier *zhèng* ‘right’. Modification by degree specifiers, like *right* for English, has been used as a diagnostic for prepositional phrases (Boertien 1997; Emonds 1972). An example of how this diagnostic has been applied in (24) and (25) below.

- (24) The fat cat napped **right** under the couch.  
 (25) Every day, class begins **right** at 3 o’clock.

In (24) and (25), *right* modifies a temporal/spatial locative preposition. *right* is optional, and requires that the interlocutors be held to a higher threshold of precision (see Lasersohn 1999; Morzycki 2001); e.g., class must begin at precisely 3 o’clock. For our purposes here, the observation that *right* can only modify prepositions (Boertien 1997; Emonds 1972) is what allows us to apply this diagnostic:

- (26) \* The fat cat napped under **right** the couch.  
 (27) \* Every day, class begins at **right** 3 o’clock.  
 (28) \* He is **right** kicking a ball  
 (int.) ‘He is kicking a ball right now’

Similarly, Mandarin Chinese can also use *zhèng* ‘right’ to modify *zài*. My translation of *zhèng* as ‘right’ is partially based on the translation of *zhèng* as ‘at this point’ in Sun (2014). This translation encodes a similar notion of exactness of degree, which is crucial for the ‘right’-diagnostic to correctly pick out adpositions cross-linguistically. Just as in English, *zhèng* ‘right’ is barred from modifying verbs directly as in (29).

- (29) \* *tā zhèng tí qiú*  
 3PS right kick ball  
 (int.) ‘He is kicking a ball right now.’

However, when *zài* is present preverbally, *zhèng*-modification is suddenly possible:

- (30) *tā zhèng zài tí qiú*  
 3PS right at kick ball  
 ‘He is kicking a ball right now.’

*zhèng* ‘right’ cannot modify any of the aspectual markers, which suggests they are not the same category as *zài*:

- (31) \* *Mali xúexí zhèng zhe*  
 Mary study right ASP<sub>IPFV</sub>.  
 (lit.) ‘Mary is right studying.’  
 (32) \* *Mali kàn zhèng guò zhè běn shū*  
 Mary saw right ASP<sub>PRF</sub>. this CLF book  
 (lit.) ‘Mary is right finished reading the book.’  
 (33) \* *Mali yǐjīng kàn zhèng le zhè běn shū*  
 Mary already read right ASP<sub>PRF</sub>. this CLF book  
 (lit.) ‘Mary already right read this book.’

Thus, I applied the *right* diagnostic for adposition-hood in English to Mandarin Chinese; a diagnostic that has never before been applied to Mandarin.

- (34) *yahu de wèilái zhèng [zài běijīng] zhìzào*  
 Yahoo DE future right at Beijing manufacture  
 ‘Yahoo’s future is being manufactured right (here) in Beijing.’
- (35) *měitiān dōu zhèng [zài sāndiǎn] shàng kè*  
 Every-day DISTR right at 3-CLF attend class  
 ‘(I) attend class every day at 3 o’clock.’

These data suggest that *zài* is not a verb or an aspectual marker.<sup>4</sup> Thus, this section has argued that *zài* distributes like other Mandarin adpositions, and passes the *right*-test in its novel application to Mandarin.

## 2.2. Generalizations about spatial adpositions — Svenonius (2004)

Another way to argue that *zài* is an adposition is to show that it behaves like other adpositions in other languages. In recent work on the left periphery of spatial adpositions, Svenonius (2004, 2006, 2010) outlined a set of cross-linguistic generalizations over spatial adpositions.

- (36) Typical Characteristics of Spatial Adpositions (Svenonius 2004:12)
1. Project XPs which can function as predicates or sentential adjuncts
  2. Do not combine with tense or aspect morphology
  3. Form a syntactic constituent with a DP complement
  4. C-select and S-select for properties of their complement
  5. Express binary relations between entities (events or individuals)

Although this list is by no means intended to be a set of criteria that an element must satisfy to qualify as a spatial adposition, it does supply circumstantial evidence that the element in

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<sup>4</sup>Complications arise for predicative locative sentences, as was noted by Sun (2014), *zhèng*-modification is less acceptable with predicative locative uses of *zài* (original gloss, or lack thereof, maintained):

- (1) *Lulu zài jiā* Sun (2014:111a)  
 Lulu at home  
 ‘Lulu is at home.’
- (2) \* *Lulu zhèngzài jiā* Sun (2014:111b)  
 Lulu PROG home

I have two responses to this data. First, in the course of my fieldwork, I have found differences between dialects of Mandarin Chinese that suggest the unacceptability of (2) is only present in certain Northern Mainland (NM) Mandarin dialects, but less egregious or absent in Taiwanese Mandarin (TW). This calls the strength of this objection into question. Secondly, the subset of my informants that do not accept *zhèng* ‘right’ with predicative locative *zài* report a sense of “incompleteness” (Lu 2015; Sun 2014; Tsai 2008; Chief 2007; Tang 2000). This incompleteness can be recovered by adding more information to the sentence (e.g., a predicative adjunct as in 34), and is thought to come from Mandarin prosodic requirements (Feng 2003, 2014). Because of this, I take the unacceptability of (2) to result from something orthogonal to *right*-modification. Thus, it should not be taken as an argument against using the *right*-modification test to diagnose *zài* as an adposition.

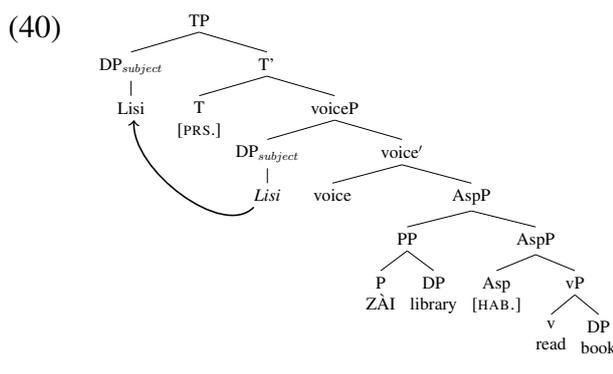
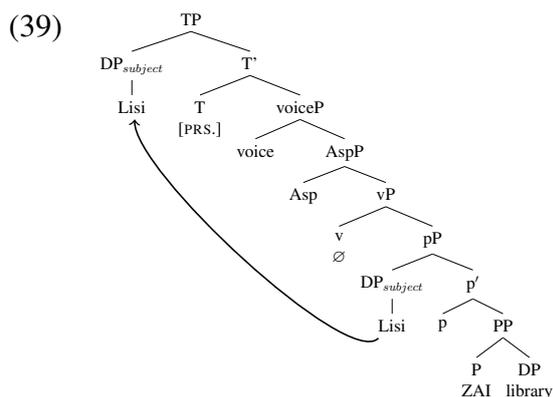
question is an adposition. Because temporal locative adpositions behave like their spatial counterparts under the Svenonius Generalizations, I will assume the generalizations hold of locative adpositions more generally. Of the typical characteristics in (36), *zài* has Qualities 1-4. §3 will use Quality 5 to inform the analysis.

### 2.2.1. Quality 1: XP Predication and Sentential Adjunction

Because it can both project a small clause main predicate (as in (39)), and adjoin to a sentence (as in 40), *zài* exhibits Svenonius (2004)'s Quality 1. In examples with no overt aspectual marking (i.e., no *le*, *gùo*, *zhe*, or habitual interpretation), the AspP projection contributes nothing to the semantic interpretation of the sentence, but is required to maintain rigorous notion of C-selection (although removing this feature of the account would not affect the analysis substantially).

- (37) *Lǐsì zài túshūguǎn*  
 Lisi at library  
 (PRS.) 'Lisi is at the library.'  
 Small clause predicate *zài*-PP

- (38) *Lǐsì zài túshūguǎn kàn shū*  
 Lisi at library read book  
 (HAB.) 'Lisi reads in the library.'  
 Adjoined *zài*-PP



In (39), the predicative pP is the argument introducer on top of a PP base<sup>5</sup>, following a small clause analysis of predicative PPs (Roy 2013; Bowers 2011; Svenonius 2004; Bowers 1993, i.a.). Virtually any aspectual specification is compatible with PP-adjunction (e.g., perfective).

I follow Myler (2014:30-31) in taking predicative locative sentences to consist of a deficient VoiceP that doesn't introduce an external argument, under which a semantically vacuous light copular verb *v* (that is interpreted as an identity function) takes a PredP complement (in this case, a pP). Interestingly, Mandarin and English differ here; the light copular verb in Mandarin is covert (by analogy to Li & Thompson 1981; Ansaldo 2009 for adjectival small clauses; see Kroeger 2005 for cross-linguistic arguments for null copulas). If *zài* is part of a small clause adposition that in the clausal spine, it cannot be selected for by Asp directly, since in (38) Asp selects for vP. To maintain strong C-selection (i.e., heads always C-select for the same syntactic category), I assume a covert copula in Mandarin.<sup>6</sup>

<sup>5</sup>Unlike in languages like English, if the P has a temporal complement, only the adjunction option is available in Mandarin: *wǎnhuì zài sān-diǎn \*(kāishǐ)*. (lit.) 'the party at 3-CLF \*(starts)'.

<sup>6</sup>There are two main potential copula candidates in Mandarin (*shì*, *yǒu*), but neither of them are acceptable, because *shì* 'be' and *yǒu* 'have' usually select for nominal complements. On the other hand, adjectival small clauses

### 2.2.2. Quality 2: Tense and Aspectual Morphology

The second quality concerns whether the purported adpositional element can host tense and/or aspect morphology. Descriptively, Mandarin is a “tenseless” language (Lin 2010; Smith & Erbaugh 2001 for discussion). I take this to mean that it has morphology for tense, it is merely covert (following Sybesma 2007). Therefore, I cannot test whether *zài* is compatible with tense morphology. Instead, I focus on whether *zài* can host aspectual morphology. In order to do this, we should take a moment to situate ourselves within the broader context of Mandarin Aspect. When I refer to ‘aspect’ in this paper, I refer to *Outer Aspect*, which corresponds to grammatical aspect, as opposed to *Inner Aspect*, or *Aktionsart* (see MacDonald 2006, 2008 for an discussion of inner aspect). There are three types of overt (outer) aspectual markers in Mandarin: two types of perfective marking and one imperfective.

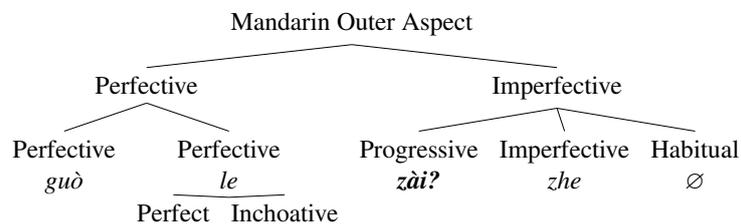


Figure 1: Schematic of Mandarin Aspectual Markings

Crucially, all of the overt markers obligatorily appear post-verbally, as in (41)-(43) (see §2.3). If *zài* were a verb, it should be able to host aspectual markers like verbs do; if *zài* were an adposition or an aspectual marker, it should not.

- (41) *tā chàng zhe gē* *Huang et al. (2009:101(51a))*  
 he sing ASP<sub>IPFV</sub>. song  
 ‘He was singing.’
- (42) *wǒ huí le jiā* *Huang et al. (2009:102(51b))*  
 I return ASP<sub>PRF</sub>. home  
 ‘I went home.’
- (43) *zhè ge rén shā gùo láohǔ* *Huang et al. (2009:102(51c))*  
 this CLF person kill ASP<sub>PRF</sub>. tiger  
 ‘This person has killed a tiger.’

None of the aspectual markers can appear on *zài*, suggesting that *zài* is not a verbal predicate.<sup>7</sup>

have been argued either to have a covert copula (Li & Thompson 1981; Ansaldo 2009) or not to require one at all (Pustet 2003:3). Thus, it isn’t unexpected to assume there is an analogous covert copula in adpositional predication sentences in Mandarin.

<sup>7</sup>However, I found one case where *zài* superficially appears to host verbal aspect in some dialects of Northern Mainland Mandarin Chinese:

- (1) *yīfǔ gūa-zài le qiáng shàng* *Haoze Li, p.c.*  
 clothes hang-at ASP<sub>PRF</sub> wall on  
 ‘The clothes were hung on the wall.’

- (44) \* *Zhāngsān zài le / gùo / zhe* *túshūguǎn*  
 Zhangsan at ASP<sub>perf.</sub> / ASP<sub>perf.</sub> / ASP<sub>imperf.</sub> library  
 (int.) ‘Zhangsan was at the library.’
- (45) \* *Zhāngsān zài le / gùo / zhe* *kàn shū*  
 Zhangsan at ASP<sub>perf.</sub> / ASP<sub>perf.</sub> / ASP<sub>imperf.</sub> read book  
 (int.) ‘Zhangsan was/is reading.’

### 2.2.3. Quality 3: Locative adpositions take nominal complements

The third property of locative adpositions is that they take nominal complements. The behavior of *zài* under this test will allow us to rule out the possibility that *zài* is an aspectual marker. Although the Svenonius (2004) generalizations call for a DP complement, DP-hood in Mandarin is notoriously hard to diagnose with any precision (Lin 1997), so I will show that the complements to *zài* must be nominal in nature. To do this, I will apply three diagnostics for nominal-hood: modification by demonstratives, individual classifiers (i.e., classifiers for objects), and phrases headed by DE (e.g., possession and relative clauses, Xiong 2005):

- (46) *qiān-wàn bù néng ràng hái zi dú zi dāi zài zhè sān ge dì fāng!*  
 absolutely NEG. can let children alone stay at these<sub>DEM. 3</sub> CLF locations  
 ‘Absolutely don’t allow your children to be alone at these three places (i.e. in the street, in a car, and on the escalator)!’  
<http://baby.163.com/15/0415/16/AN8MHME200362USS.html>
- (47) *Lisi zài bàbà de bàngōngshì*  
 Lisi at dad DE office  
 ‘Lisi is at his dad’s office.’
- (48) *zài Lisi zuò fàn de shíhòu Zhāngsān kàn le yì běn shū*  
 at Lisi do food DE time, Zhangsan read ASP<sub>perf.</sub> one CLF book  
 ‘At the time when Lisi was making food, Zhangsan read a book.’

Locative *zài*-phrases pass the above tests for adposition-hood. The naturally occurring example in (46) shows that *zài* takes a nominal complement, since the spatial complement has been modified by a demonstrative, a numeral, and an object classifier. Spatial locative nominals can be modified with possession, suggesting a nominal character in (47). For temporal complements to *zài* like (48), they can embed a (head-final) relative clause below a nominal complement, suggesting that there is a nominal complement in temporal cases as well. For the progressive interpretation, it is impossible to apply the tests for nominal-hood. It’s possible that null nominals cannot be modified by demonstratives, classifiers, and DE-phrase for a different reason. It could be because they have no phonological material, or because their semantics doesn’t allow for this

---

(2) *Lǐsì bǎ zhè běn shū fàng-zài le zhuōzǐ shàng* Sybesma (1999:46)  
 Lisi BA this CLF book put-at ASP<sub>PRF</sub> table on  
 ‘Lisi put the book on the table.’

I don’t take *zài* to be a verb itself in these cases because verbal aspect and *zài* can only be linearly adjacent with certain verbal predicates are present; “verbs of putting (in a spatial configuration)” (Levin 1993:111-112; e.g., *fàng* ‘put’, *gāu* ‘hang’, *dāi* ‘stay/reside’ etc.). Thus the verb itself is contributing heavily in these sentences. Also, the same (truth conditional) meaning is obtainable with various topicalizations of the PP without the aspect marker (see 21, 22), which suggests that *zài* doesn’t host the aspect itself in these cases.

sort of modification. This is an open question; therefore, the evidence doesn't argue against a nominal in the aspectual version.

#### 2.2.4. Qualities 4 and 5: Selection and Interpretation

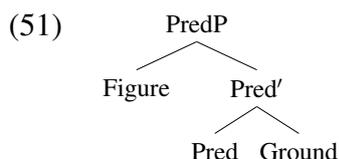
Locative adpositions C- and S-select their complements (Svenonius 2004). Some examples of C-selection concerns idiosyncratic case assignment in languages like Russian and Icelandic, or idiosyncratic *of*-selection in English (Svenonius 2004:14(30)):

(49) in (\*of) the house

(50) out \*(of) the house

However, C-selection tests must be language specific and a more relevant diagnostic for Mandarin concerns whether adpositional *zài* always select for the category of its complement. As discussed above, there is some tentative evidence that *zài* always selects for a nominal complement. We will take this to be the case. As for S-selection, it usually holds between complements, and pertains to the presuppositions of certain prepositions. For example, in English, 'in' presupposes that its complement is a container, while 'on' presupposes its complement is a surface (Svenonius 2004:14). *zài* requires that its complement be something which has temporal or spatial extent (e.g. a span of time, a location in space, an event). For example, if *zài* takes a complement which denotes an abstract concept (e.g., 'justice' *zhèngyì*, 'equity' *gōngpǐng*), the result is very anomalous. A more in depth discussion of semantic restrictions on *zài*-Ø will be discussed later in §3.

The final quality of adpositions across languages has to do with their interpretation: they encode binary relations that hold between entities, as long as they are both of the same semantic type. This view assumes that all locative adpositions have constant argument structure: they encode a binary relation that holds between the 'Figure' and the 'Ground' (for further discussion, see Talmy 2011, 1978; Svenonius 2006, 2004; Demirdache & Uribe-Etxebarria 2000, 2004; Hale 1986, among others).



We will return to the implications of generalization (5) in §3 below.

#### 2.3. Progressive *zài* is not an aspectual marker or a verb— Distributional Evidence

To argue that *zài* is an adposition, I must show that its syntactic behavior differs from the behavior of aspectual markers and verbs. Since modificational uses of *zài* are unanimously taken to be adpositional, I will set them aside for the moment. To take aspect markers first, there are four elements which contribute to aspectual interpretations in Mandarin (Klein et al. 2000; Lin 2004; Huang et al. 2009; Li 2012, see above §2.2): *zài*; *zhe*, an imperfective marker; *le*, which has a range of perfective meanings; and *guò*, an experiential perfective. Of these, only *zài* occurs preverbally. It also cannot appear post-verbally (without a complement, see fn.7), contra the other elements in the list:

- (52) *Zhāngsān zài xuéxì*  
Zhangsan at study  
'Zhangsan is studying.'
- (53) \* *Zhāngsān xuéxì zài*  
Zhangsan study at  
(int.) 'Zhangsan is studying.'

For the other three aspectual markers, the ASP element obligatorily appears after the verb, and cannot appear pre-verbally.

- (54) \* *Zhāngsān zhe xuéxì*  
Zhangsan ASP<sub>IPFV</sub> study  
(int.) 'Zhangsan is studying.'
- (55) *Zhāngsān xuéxì zhe*  
Zhangsan study ASP<sub>IPFV</sub>.  
'Zhangsan is studying.'
- (56) \* *Zhāngsān guò kan zhè běn shū*  
Zhangsan ASP<sub>PRF</sub> saw this CLF book  
(int.) 'Zhangsan is finished reading this book.'
- (57) *Zhāngsān kan guò zhè běn shū*  
Zhangsan saw ASP<sub>PRF</sub> this CLF book  
'Zhangsan is finished reading this book.'
- (58) \* *Zhāngsān le kàn zhè běn shū*  
Zhangsan ASP<sub>PRF</sub> read this CLF book  
(int.) 'Zhangsan read this book.'
- (59) *Zhāngsān kàn le zhè běn shū*  
Zhangsan read ASP<sub>PRF</sub> this CLF book  
'Zhangsan read this book.'

Thus, *zài* has a different distribution than the other aspectual elements in Mandarin, supporting my argument that it should have a different syntactic category.

The final option is that *zài* is a verb. Since Mandarin is light on inflectional morphology and lacks overt nominalizers and verbalizers, it is hard to diagnose verbal category. The main test for verb-hood is whether the element can host aspectual morphology (Huang et al. 2009). This test corresponds to Quality 2 from our generalizations of locative adpositions, see §2.2.2.

#### 2.4. Interim Summary

This section has shown that *zài* is most productively analyzed as an adposition, based on cross-linguistic evidence discussing the behavior of adpositions, as well as distributional evidence and the application of the novel Mandarin 'right'-modification test. Taking *zài* to be adpositional goes against analyses of progressive uses of *zài*, which label *zài* an aspectual marker or particle (Li & Thompson 1974; Chen 1978; Li & Thompson 1989; Ross 1991; Smith 1991; Klein et al.

2000; Lin & Liu 2004, 2009; Huang et al. 2009; Sun 2014). A consequence of this account is that there is an explanation for why *zài* has a different syntactic distribution from the other aspectual elements in Mandarin. It is pre-verbal because it is a high adposition and Mandarin high adpositions are pre-verbal.

### 3. The analysis

Now that I have motivated the choice to analyze *zài* as an adposition, I return to Quality 5 from §2. If this generalization is on the right track, *zài* should always take its innermost argument as its ground, and encode a relation between it and a figure that is introduced elsewhere (by a Pred.). For our purposes, let's assume that the adposition combines first with its complement, and based on the semantic type of that complement, it seeks a figure of the same type to relate. Also, I will adopt the notion that trace function type shifts are available, and can apply (Krifka 1998). If the adposition first takes a location entity (e.g., 'the library',  $x$ ) with spatial extent  $s$  (which is accessible via the trace function  $\sigma$ , which takes entities to their spatial traces; Krifka 1998) as its ground, it then seeks another entity (e.g., Zhāngsān,  $y$ ) with spatial extent  $s'$  as its figure. Then, it asserts that the spatial extent  $s'$  OVERLAPS with the spatial extent  $s$ . If we define overlap as a PROPER subset relation (i.e., the subset must not be equal to the set), then we get the interpretation of containment where Zhangsan is physically in the library.

Similarly, if the adposition first encounters an interval of time (e.g., 'yesterday',  $i$ ), it seeks another interval of time. It will encounter an event (e.g., Zhāngsān kàn le yì běn shū, 'Zhangsan was reading a book',  $e$ ) from which it can access a runtime  $i'$  (which is accessible via the trace function  $\tau$ , which takes events to their runtimes; Krifka 1998); it then asserts that the runtime  $i'$  of  $e'$  OVERLAPS with  $i$ .

If the adposition encounters an event first, it will seek another event, resulting in a progressive interpretation. For example, the progressive use of the adposition *zài* takes an event  $e$  in progress in our world  $w$  at time interval  $i$  (e.g. 'Zhangsan is reading',  $e$ ), and seek another event. It then encounters  $e'$ , which is the FUTURE CULMINATION of  $e$  (at a reference time  $i'$  in the future and at accessible world  $w'$ ); it also asserts that  $e$  is a sub-event of  $e'$ , relative to  $i$ ,  $i'$ ,  $w$ , and  $w'$  (Bennett & Partee 1978; Dowty 1977, 1979; Parsons 1990; Landman 1992; Portner 1998; Hallman 2009). Since the trace function  $\tau$  can apply to each event, the runtime of  $e$  also OVERLAPS with the runtime  $e'$ . By asserting this overlap, this sentence will get the interpretation that  $e$  has not yet completed (since  $e'$  is the completed event which has  $e$  as a proper sub-event). These specifications for figure-ground are summarized below in Table 1. Thus, we have the three different interpretations of *zài* resulting semantically from the type system.

OVERLAP	Ground	Figure
<b>Spatial <i>zài</i></b>	Spatial Span $s$ of an entity $x$	Spatial Span $s'$ of an entity $y$
<b>Temporal <i>zài</i></b>	Time Interval, $i$	Runtime $i'$ of an event $e'$
<b>Aspectual <i>zài</i></b>	An event $e$	An event $e'$

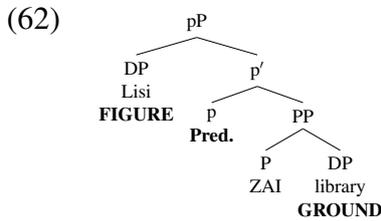
Table 1: Figure-Ground Argument Structure, by subtype

With this semantics for *zài*, I will go through the main examples one by one, and provide each with a syntactic structure, based on the figure-ground argument structure in Table 1.

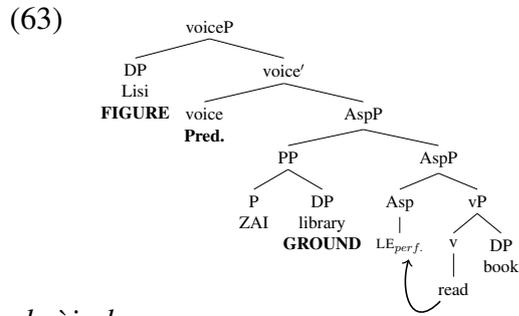
### 3.1. Spatial *zài*-phrases

For spatial uses of *zài*, the complement is a spatial location. The figure is introduced by little *p*, or *voice* higher in the structure, as we see in (60) below. Here, the *pP* associated with *zài* introduces ‘Lisi’ as the figure, and situates it with respect to its internal argument of the PP, ‘the library’ (i.e. ‘the ground’). The same holds for spatial adjuncts (61), except that instead of the little *p* introducing the figure in its specifier, the figure is the specifier of *voice*. This analysis expands on existing work using Pred.; classically, *voice* Pred. is used for the main sentential predicate (e.g. unergative sentences with predicative adjectives, see Myler 2014:33), which are part of the clausal spine. Here, the ground is contained within an adjunct.

- (60) *Lǐsì zài túshūguǎn*  
 Lisi at library  
 ‘Lisi is at the library.’



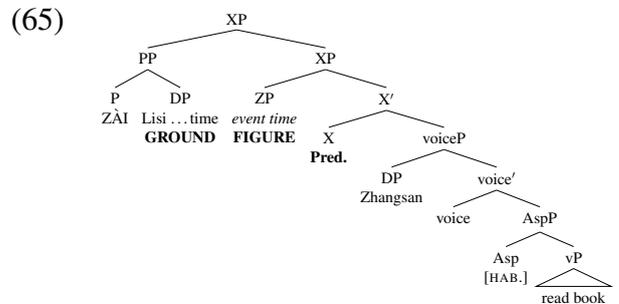
- (61) *Lǐsì zài túshūguǎn kàn le shū*  
 Lisi at library read ASP<sub>perf</sub> book  
 (PRF.) ‘Lisi read in the library.’



### 3.2. Temporal *zài*-phrases

In order to analyze adjoined temporal locative PPs, we must expand the theory of Pred. Semantically, temporal locative PPs encode a relation between their complement and a structurally higher entity corresponding to a span in time. The next accessible point in time is the runtime of matrix verbal predicate (see Stowell 2007 for arguments that the event time is encoded as the complement of T, above *voiceP*). I assume that there is a ZP (a temporal analogue of DP) headed by Z (the temporal analogue of D) that corresponds to the runtime of the event (Stowell 2007, 1996). This ZP is introduced in a specXP (the temporal analogue of argument-introducing *voiceP*, perhaps corresponding to an *i*\* of Wood & Marantz To appear) that occurs above the external argument position, following (Stowell 2007:443(8)). Thus, Pred. in the temporal case is the head of a category XP, as in (65).

- (64) *zài Lǐsì zuò fàn de shíhòu, ZS kàn shū*  
 at Lisi do food DE time, ZS read book  
 (HAB.) ‘When Lisi cooks, Zhangsan reads.’



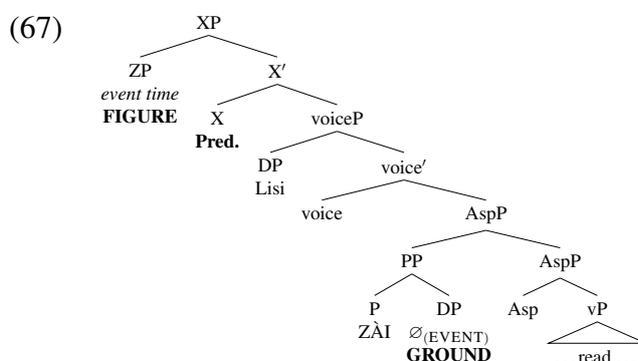
The temporal PP adjoins in the low TP-domain following (Demirdache & Uribe-Etxebarria 2004; Cheung 2012, 2013, 2015; Todorović & Wurmbrand 2015), but above the adjunction site of their spatial counterparts. Support for this view comes from PP-topicalization: only the

highest PP element can topicalize to PP-topic position (Rizzi 2004, 1997, i.a.). If there is a spatial PP adjunct and a temporal one in Mandarin, only the temporal one can topicalize.

### 3.3. Aspectual *zài*-phrases

For the structure of aspectual *zài* sentences, I follow the semantics literature on the progressive (Bennett & Partee 1978; Dowty 1977, 1979; Parsons 1990; Landman 1992) and (Neo-)Davidsonian event semantics (Davidson 1969; Parsons 1990; Krifka 1992, among others) that I described above. Since there is no overt nominal complement in aspectual *zài* sentences, I take there to be a covert one. This covert nominal corresponds to the event that our semantics of the progressive supplied us with; the one that may culminate in the future. Please see §3.4 for discussion of the identity of the covert nominal and related issues.

(66) *Lǐsì zài kàn shū*  
 Lisi at read book  
 ‘Lisi is reading book(s).’



Like temporal locative *zài* phrases, I take the figure for aspectual *zài* to be the runtime of the matrix event. Similarly, the figure corresponds to the runtime of the matrix event. The progressive interpretation arises from situating the runtime of the matrix event in progress with respect to the future event that might culminate (which is large enough by definition, since it corresponds to the completed version of the matrix event).

I have been calling this reading a “progressive” the whole time, but haven’t yet explained why. The reason is that aspectual *zài* is subject to further semantic restrictions than temporal locative *zài* sentences that lead us analyze it as a progressive: the main predicate of the sentence must be a ‘dynamic’ event (Smith 1991, 1997; Yeh 1993), i.e., an activity or accomplishment in the Vendler Classification (Vendler 1967). This restriction arises because *zài* is incompatible with states (Smith 1991:273, Klein et al. 2000, among others); both states and achievements in the Vendler Classification have a stage or sub-event that is stative (Smith 1991).

I take this stative restriction to arise from a combination of the semantics of the event nominal and the semantics of the overlap relation encoded by *zài*. This semantic restriction isn’t s-selection in the usual sense (Chomsky 1965; Grimshaw 1979; Chisholm 1981; Van Valin 2001, and others), because S-selection usually holds between predicates and their arguments (Grimshaw 1979), and I take *zài*-Ø to be an adjunct. Thus, we have some kind of semantic relationship where an *adjunct* PP requires that the phrase it is *adjoined* to has the correct Aktionsart; this kind of relationship is much less local than classic s-selection. Luckily, this is not the only instance in language where adjoined PPs share a semantic relationship with something in the clausal spine that is independent of local predicate-argument configurations. For example, temporal PP adjuncts often require that the tense of sentence match the time they denote.

- (68) (Today is the 13th of June) [On the 15th of June]<sub>PP</sub>, I **will go** to the movies  
 (69) ?? (Today is the 13th of June) [On the 15th of June]<sub>PP</sub>, I **went** to the movies

One consequence is that this sort of semantic restriction should be predicated to hold for aspectual sentences in Mandarin, since Mandarin, as a ‘tenseless’ language, uses aspect to encode most temporal meanings.

### 3.4. *The identity of the null event nominal — eventive pronominal ‘it’*

Thus far, I have said the aspectual *zài* sentences feature a null nominal, this section will clarify what sort of syntactic element it is. I take the null event nominal to be a null eventive pronominal, similar to ‘it’ in English. Evidence supporting this view comes from a comparison with English. In a pair of short squibs in *Linguistic Inquiry*, Bolinger (1971b,a) introduces a colloquial and eventive use of the English pronoun ‘it’ that receives a progressive interpretation when it is the complement of the locative preposition ‘at’.

- (70) He was working an hour ago, and I guess he’s still **at it**. Bolinger (1971b:246)  
 (71) That idiot dog keeps chewing on my shoes, and from the slobbery sounds coming from the closet, I know he’s **at it** again!  
 (72) So, you’re going to mow the lawn. While you’re **at it**, could you trim the hedge too?

The examples above have an ongoing, progressive interpretation, since they are incompatible with continuations to the sentence which indicate that the event has completed.

- (73) ?? He (only) went to work an hour ago, and I think he’s still **at it**. But, he already stopped working for the day.  
 (74) He (only) went to work an hour ago. But, he already stopped working for the day.

In (73), there is the distinct impression that the final sentence contradicts the previous part of the sentence, this is because the completive nature of the continuation contradicts the progressive interpretation of ‘at it’. If that portion of the utterance is removed, as in (74), the sentence is grammatical. Even the dynamic semantic restriction that we see for Mandarin is present in the English ‘at it’ construction:

- (75) \* Bob was sleeping when I went into his room earlier, and I guess he’s still **at it**  
 (76) \* Jim knew the answer to my last question, so when I ask him another I’m sure he will be **at it** again!

I take this eventive pronominal use of ‘it’ in English to be an overt counterpart of the null event pronominal I postulate for Mandarin. Based on the data above, the English ‘at it’ construction shares (at least) two similarities with Mandarin progressive *zài* (i.e., complement of a locative adposition and stative incompatibility), supporting the idea that the Mandarin null eventive nominal is an eventive pronominal. One prominent difference between the two is that Mandarin *zài* progressives require the pronominal to be covert:<sup>8</sup>

<sup>8</sup>There is at least one more difference between the two: in order for ‘at it’ to be felicitously used in English, there must be strong contextual support. For example, (70) becomes ungrammatical out of the blue or without *still*, as does and (71) without *again*. This is not true of the Mandarin *zài* progressive.

- (77) *wǒ zài (\*tā) kàn shū.*  
 I at (\*it) read book  
 (int.) I'm reading

Why is the eventive pronominal obligatorily null in Mandarin? Perhaps this question is a bit deeper: what it is that allows the pronominals to be null in general? At least some researchers have suggested that covert object pronouns are pragmatically licensed; they can be left unsaid when there is strong contextual support uniquely identifying their referent (Perlmutter 1971; Chomsky 1981; Sperber & Wilson 1986; Cole 1987; Holmberg 2005; Biberauer et al. 2010; Scott 2013, among others). Evidence for this comes from silent arguments (e.g. null pronominals) in languages like Spanish (Ordóñez & Treviño 1999) and Mandarin (Huang 1984, 1985, 1987, 1989).

- (78) *Zhāngsān<sub>i</sub> kàn-jian Lǐsì<sub>j</sub> le ma?* (Huang 1989:187(1))  
 Zhangsan look-see Lisi ASP<sub>PRF</sub> Q  
 Did Zhangsan see Lisi?

- (79) *(Tā<sub>i</sub>) kàn-jian (tā<sub>j</sub>) le.* (Huang 1989:187(2a))  
 3PS look-see 3PC ASP<sub>PRF</sub>  
 (He) saw (him).

One might expect that perhaps pragmatic concerns on the pronunciation of pronouns might also effect whether null eventive pronominals ever surface in Mandarin. We already have evidence that they don't surface in the progressive, but perhaps they show up elsewhere. This is not the case. Even in sentences where one might expect cross-sentential reference to an event, the null eventive pronominal can never be overt in Mandarin.

- (80) *wǒ kàn le yì běn shū. (??Tā) hěn hǎo-wár!*  
 1PS read ASP<sub>PRF</sub> one CLF book. (??3PS) very good-fun  
 (int.) I read a book. It was very fun!

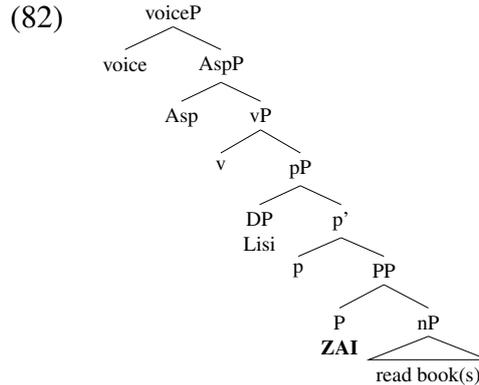
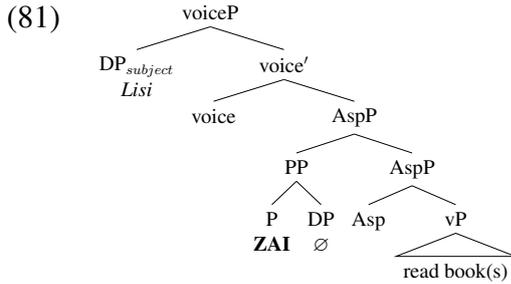
Example (80) is only grammatical without a pronominal; if it present the sentence is uninterpretable and very anomalous. Thus, it's possible this is another case in Mandarin where we might want a null eventive pronominal, making the idea that Mandarin has a covert version of action-referring *it* more credible.

A final potential explanation is that Mandarin doesn't have an eventive pronominal in its lexical inventory. But, it is unsatisfying to merely postulate a lexical gap, especially since this analysis is predicated on the null eventive nominal contributing to the interpretation of the sentence. Another option would be to postulate a difference between the lexical entries for the object and eventive pronominals. This difference could stem from the presence of person features on the pronominal.<sup>9</sup> Object pronominals have person features that get spelled out, while the eventive pronominal lacks a person feature and likewise has no a phonological form. Some tentative evidence may come from the fact that the Mandarin object pronominals cannot be used for eventive uses (77, 80). Because of this and also because the presence of a null eventive nominal in Mandarin allows us to analyze the meaning of these sentences in a fashion that give *zài* a unified meaning (i.e., as PROPER OVERLAP), I will adopt the null eventive pronominal analysis. However, to fully address the questions raised in this section, a more in depth survey of Mandarin null pronominals will ultimately be required.

<sup>9</sup>Mandarin object pronominals do not distinguish between genders, but only in number.

### 3.5. Adjunction v. Clausal Spine Analyses of Progressive *zài*

In explicating the current analysis, I will argue further in favor of an adjunction analysis of progressive *zài* like in (81), by arguing against a clausal spine analysis like (82). To arbitrate between (81) and (82), we must first situate ourselves with the full range of data. To do this, I will re-label three types of relevant sentences that we have considered previously: Type 1 where *zài* acts as the main predicate, the contentious Type (the focus of this section), and the Type 3 progressive use.



- (83) *Lǐsì zài túshūguǎn*  
Lisi at library  
(PRS.) ‘Lisi is at the library.’

*Type 1: Predicative Locative*

- (84) *Lǐsì zài túshūguǎn kàn shū*  
Lisi at library read book  
(PROG.) Lisi at the library reading  
(HAB.) ‘Lisi reads at the library.’

*Type 2: Pred. Loc. + Pred. Adjunct*

- (85) *Lǐsì zài kàn shū*  
Lisi at read book  
(PROG.) ‘Lisi is reading.’

*Type 3: Progressive*

Once again, Mandarin PPs are preverbal (see 10), whereby the string corresponding to (84) is ambiguous (e.g., Chao 1968; Chen 1978; Woo 2010, 2013) between a habitual interpretation with an adjoined locative PP, and the progressive interpretation of Type 2 sentences that I will focus on. There are two ways to view these data: either you group Type 2 with Type 1 (which is the view I take here), or you can group Type 2 with Type 3 (Woo 2010, 2013; Chen 1978; Chao 1968). Grouping Type 1 and Type 2 together takes its lead from cross-linguistic work on “predicative adjuncts” (e.g., English, Borgonovo & Neeleman 2000), which mimic the progressive interpretation despite being stative sentences with eventive adjuncts. This view leads to the structures below, which correspond to the adjunction analysis in (81) above.

Under my account, the only difference between Type 1 (88) and Type 2 (89) is that (89) has a verbal adjunct to vP (here labeled XP), which corresponds to the English gerundive.

- (86) *Lǐsì zài túshūguǎn*  
Lisi at library



be preserved. As argued earlier in §3, the runtime of the matrix event (as the figure) to be related with respect to the runtime of the larger intensional event (as the ground), but in (82), the matrix event is the ground (because it combines directly with the P-head), yielding the wrong semantics. We end up getting the argument structure exactly backwards. One could try to get around this by making OVERLAP symmetric (i.e., if  $x$  OVERLAPS  $y$ , then  $y$  OVERLAPS  $x$ ). This would force us to abandon the notion that the OVERLAP encoded by *zài* is PROPER OVERLAP (i.e., a notion of proper set-containment or proper part-hood of events Dowty 1977, 1979; Landman 1992; Portner 1998; Hallman 2009). Based on these considerations, I conclude that the clausal spine analysis for *zài* is untenable.

#### 4. Conclusion

This paper has proposed a novel syntactic analysis of the Mandarin adposition imperfective, *zài*. Utilizing a theoretical linguistic framework where structure feeds meaning, I have argued that *zài* is adpositional in all its uses, and that when it is interpreted as a progressive, its complement is a null event nominal. This account also postulates a unified argument structure for *zài* following a figure-ground semantics for spatial adpositions (Talmy 2011, 1978; Svenonius 2006, 2004; Demirdache & Uribe-Etxebarria 2004; Hale 1986), under which *zài* encodes an overlap relation between two semantically similar elements. This overlap relation was influenced heavily by semantic work on the interpretation of the progressive, which encodes overlap between an event in progress and its expected completed counterpart in another possible world (Dowty 1977, 1979; Landman 1992; Portner 1998). This account lays the ground-work for a thorough account of prepositional imperfectives cross-linguistically, while offering up unified semantics as a potential explanation for why some languages abandon the traditional clausal option for encoding aspect (e.g., periphrastic progressive) for the cross-linguistically robust option to encode imperfective aspect using spatial adpositions.

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## Abbreviations

ACC	Accusative Case
ASP	Aspect
CLF	Classifier
COP	Copula
DEM	Demonstrative
DISTR	Distributive Marker
HAB	Habitual
IPFV	Imperfective
INF	Infinitive
NEG	Negation
NOM	Nominative Case
PTCP	Participle
PST	Past tense
PRF	Perfective
P	Person
PL	Plural
POSS	Possession Marker
PRS	Present tense
PROG	Progressive
Q	Question particle
S	Singular

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## De-phased by external pair-merge of C to T and its consequences

Yushi, Sugimoto

This paper aims at the possible application of external pair-Merge of C to T (<T, C>), based on the proposal of Epstein et al. (2016) and its consequences. Chomsky (2004) argues that internal set-Merge comes for free as well as external set-Merge, and suggests that there is an operation of pair-Merge. It also applies either externally and internally. Therefore, there are four possible sub-types of Merge operation. I argue that external pair-Merge of phase heads to non-phase heads brings about de-phasing effect (a cancellation of phases). As a consequence, we can derive ‘grammatical’ derivations for some cases of improper movement, including *tough*-constructions in English. Furthermore, we can get the desirable prediction for Merge-over-Move principle in terms of labelling.

### *1. Introductory remarks*

In the recent Minimalist Program for linguistic theory, a fundamental operation for structural building is unbounded set-Merge. Chomsky (2004) argues that internal set-Merge comes for free as well as external set-Merge. In addition to set-Merge, he also suggests that there is an operation of pair-Merge that is a descendant of Adjunction. Thus, there are four possible subtypes of Merge operation.

This paper investigates the consequence of external pair-Merge of C to T based on Epstein, Kitahara and Seely (2016, henceforth EKS 2016) and its consequences. Specifically, I propose that external pair-Merge of C to T is another mode of Merge, which is bolded part in (1).

(1)

	C/T	$v^*/R(V)$
Internal Pair-Merge	$\{ \langle T, C \rangle, \{ T, \dots \} \}$	$\{ \langle R, v^* \rangle, \{ R, \dots \} \}$ Chomsky (2015)
External Pair-Merge	$\langle T, C \rangle$ <b>Proposal in this paper</b>	$\langle R, v^* \rangle$ EKS (2016)

Assuming that external pair-Merge of C to T can apply freely, we can derive ‘grammatical’ derivations for ‘proper’ improper movement, which includes the movement from an A’-position to an A-position. Furthermore, I propose that external pair-Merge of C to T is realized as infinitival defective head *to* in English as shown in (2).

(2) External Pair-Merge of C to T  $\rightarrow \langle T, C \rangle = to$ 

I argue that the amalgam  $\langle T, C \rangle$  is sufficient for serving as a label, while finite tense head T in English is “too weak to serve as a label Chomsky (2015: 9)” just like the amalgam  $\langle R, v^* \rangle$  is enough for serving as a label while R is too weak to serve as a label (Chomsky 2015). Furthermore, I argue that if external pair-Merge of C to T is applied prior to feature inheritance of C to T, uninterpretable features on C become invisible, so that the phasehood of C is cancelled. The conclusion is that the amalgam  $\langle \text{non phase-head}, \text{phase-head} \rangle$  is visible for minimal search but phase heads that are inside the amalgam are invisible for minimal search.

This paper is organized as follows: Section 2 introduces the framework that is adopted in this paper and shows that pair-Merge as well as set-Merge applies freely according to EKS (2016) and Nomura (2014, 2015). Section 3 introduces my proposal that external pair-Merge of C to T explains the ‘proper’ improper movement. In Section 4, I try to deal with overgeneration problems of external pair-Merge of C to T. Section 5 puts forward the proposal that external pair-Merge of C to T is realized as infinitival marker *to* in English, and Exceptional Case Marking (ECM) constructions, raising constructions and control constructions can be led from the proposal. Moreover, I argue that there is a desirable prediction for Merge-over-Move principle with respect to external pair-Merge of C to T. The last section concludes this paper.

## 2. Free application of set-/pair-Merge

### 2.1. Assumptions

Chomsky (2004 *et seq.*) argues that there must be a generative system of language to capture the discrete infinity, which is the fundamental property of human language. *Merge* guarantees the unboundedness of human language expressions and it comes for free either externally or internally. According to Chomsky (2013), Merge takes  $n$  (typically two) syntactic objects and combines them into an unordered set, without any labels to its syntactic objects. Set-formation does not specify the word order of  $\alpha$  and  $\beta$  (3).

(3) Merge  $(\alpha, \beta) = \{\alpha, \beta\}$

In addition to the simplest set-Merge, there is *Pair-Merge*, which takes two syntactic objects and combines them into an ordered set as in (4).

(4) Pair-Merge  $(\alpha, \beta) = \langle \alpha, \beta \rangle$

Thus, it is natural to think that there are internal/external set-/pair-Merge, which are the four sub-types of Merge operation (Table 1).

	Set-Merge	Pair-Merge
External	External Set Merge	<b>External Pair Merge</b>
Internal	Internal Set Merge	Internal Pair Merge

Table1: The combinations of Merge

Based on Chomsky (2004, 2005), set-Merge freely applies either internally or externally. Extending this claim to the pair-Merge, either external or internal pair-Merge must come for free unless there is some stipulation. Thus, the null hypothesis is the rule application of the four sub-types of Merge in Table1 is freely ordered. That is, it can apply anytime in the derivation.

## 2.2. Assumptions in Chomsky (2015)

Firstly, I list up the assumptions in Chomsky (2015). The first one is, as argued in the previous section, that Merge is the simplest operation and comes for free in narrow syntax.

(5) Merge  $(\alpha, \beta) = \{\alpha, \beta\}$

The application of Merge is not constrained and Merge is not feature-driven (e.g., EPP-feature, edge feature). In the form of the simplest Merge (5), there is no projection and word order.

Secondly, it is desirable from the point of view of computational complexity to assume Inclusiveness Condition and No Tampering Condition (6).

(6) Computational Complexity

(i) Inclusiveness Condition

“No new objects are added in the course of computation apart from rearrangements of lexical properties (in particular, no indices, bar levels in the sense of X-bar theory etc.)” (Chomsky 1995:228)

(ii) No Tampering Condition

“Merge of X and Y leaves the two SOs unchanged.” (Chomsky 2008:138)

The Inclusiveness Condition prohibits introducing any items such as bar levels, except for lexical items in lexicon. No tampering Condition indicates that when Merge is applied, we cannot add anything or modify the syntactic objects which is already formed by Merge.

The third assumption is Phase Theory. Phase theory is also taken to be desirable for strict derivational model of syntax from the perspective of computational complexity.

(7) Phase Theory

- (i) The locus of phases is unvalued features (Chomsky 2015).
- (ii) Phase Impenetrability Condition (PIC): Chomsky (2004:108)
  - a.  $PH[\alpha\sigma] = [\alpha[ H \beta]]$  (H is a phase head,  $\alpha$  is the edge of PH,  $\beta$  is the complement of H.)
  - b. “The domain of H is not accessible to operations, but only the edge of HP.”
- (iii) Feature Inheritance of C/ $v^*$  to T/R (Chomsky 2007, 2008, Richards 2007)
  - a. C-T inheritance: uF must spread from edge to nonedge (i.e., from C to T,  $v^*$  to R, etc).
  - b. Value-Transfer Simultaneity: Value and Transfer of uFs must happen together.
  - c. PIC: The edge and nonedge (complement) of a phase are transferred separately.
- (iv) Transfer
  - a. Assume that (I-)L(language) has three components: narrow syntax (NS) maps LA(lexical array) to a derivation D-NS; the *phonological* component  $\Phi$  maps D-NS to PHON; the *semantic component*  $\Sigma$  maps D-NS to SEM.
  - b. TRANSFER hands D-NS over to  $\Phi$  and to  $\Sigma$ . (Chomsky 2004:107)

Phases are domains where syntactic operations are conducted and narrow syntax cannot see inside very deeply, which is explicitly noted as the Phase impenetrability Condition (PIC).

Feature Inheritance is proposed by Chomsky (2008) and Richards (2007). Richards (2007) argues that feature inheritance is deduced from two premises: (i) Value and Transfer of uFs must happen together; and (ii) the edge and nonedge (complement) of a phase are transferred separately. The consequence of feature inheritance shows that  $\phi$ -features are inherited by T, and then the complement of a phase head is transferred. Cyclic Transfer sends a part of the derivation to the interfaces.

The fourth assumption in Chomsky (2015) is Labeling Theory (Chomsky 2013, 2015). Labeling Theory is derived from minimal search that is an instance of the third factor (i.e., not specific to language) and labels must be necessary for some reasons (Chomsky 2013). Minimal search finds the most prominent item that is a lexical item and becomes a label (8).

(8) Labeling Theory (Chomsky 2013, 2015)

- (i) Labels are determined by minimal search.
- (ii) Labels are necessary for the interpretation at Interfaces.

Chomsky (2013) proposes that there are three patterns for labeling. The trivial one is  $\{H, XP\}$ , where minimal search unambiguously finds H as a label (9i).

(9)

- (i) SO = {H, XP} (H is a head, a lexical item)
- (ii) SO = {XP, YP}
  - (A) SO = {XP, YP}
    - {XP, ..., {XP, YP}, where XP is the lower copy of XP.
  - (B) SO = {XP, YP}
    - {XP<sub>[F]</sub>, YP<sub>[F]</sub>}

The problematic pattern is {XP, YP}. When minimal search finds the candidate of a label in {XP, YP} structures, it finds the heads of X and Y simultaneously and the label is not determined by a unique head in (9ii). One solution is that one of the syntactic objects moves out of this structure. It is assumed that the copy of syntactic objects is invisible for minimal search (Chomsky 2013). Then, only the unmoved syntactic object is visible to minimal search and the head becomes the label. The other pattern is feature sharing. The canonical case is subject-raising to [spec, TP]. In (10), DP at the edge of  $v^*$ P moves to [spec, TP].

(10)  $\{\alpha = \langle \varphi, \varphi \rangle^1 \text{ DP}_i, \{\beta \text{ T}, \text{DP}_i, \dots\}$ 

Chomsky (2015) stipulates that T in English is too weak to serve as a label while languages with rich agreement such as Italian have T that is strong enough to serve as a label. Then, in English, if minimal search finds into  $\beta$ , there is just T and the label of  $\beta$  cannot be determined in (10). If the subject is raised to [spec, TP], there is {XP, YP} structure. XP, which is typically DP and T have the relevant features, that is,  $\varphi$ -features. Thus, the label of  $\alpha$  is  $\langle \varphi, \varphi \rangle$ .

The fifth assumption is about roots and their categorizers. Chomsky claims that there are roots whose categories are not specified at lexicon. When a root combines with, say, a verbal categorizer  $v^*$ , it becomes the amalgam [R- $v^*$ ], which serves as a label. The whole phrase is regarded as a verbal phrase.<sup>2</sup>

(11) Root, categorizer

- (i) Substantive elements of lexicon are roots. The categories of roots are determined by categorizer  $v, n, \dots$  etc.
- (ii) Root is also too weak to serve as a label.

Next, we see the concrete derivation in Chomsky (2015). The first derivation is  $v^*$  phase (12) and the rule order in Chomsky (2015) is in (13).

(12) The derivation of  $v^*$  phase

- (i) He expects John to win
- (ii)  $\{\langle \text{R}, v^* \rangle, \{\alpha = \langle \varphi, \varphi \rangle \text{ DP}_i, \{\text{R}, \{\beta \text{ DP}_i \dots\}\}\}\}$

<sup>1</sup> I use this notation just for expository reasons. This notation indicates that the label of  $\alpha$  is  $\langle \varphi, \varphi \rangle$ .

<sup>2</sup> In this paper, R is just used as a non-phase head, which is too weak to serve as a label. Readers can read it as just V.

(13)

- (i) Form  $R-\beta$  by External set-Merge (EM)<sup>3</sup>
- (ii) Internal set-Merge (IM) of DP in  $\alpha$  (EPP)
- (iii) Merge  $v^*$ , reaching the phase level
- (iv) Inheritance
- (v) Labeling;  $\alpha$  is labeled  $\langle\phi, \phi\rangle$
- (vi) R is raised to  $v^*$  forming R with  $v^*$  affixed, hence invisible, so phasehood is activated on the copy of R, and DP (which can be a *wh*-phrase) remains in situ, at the edge.

The derivation in phases is totally cyclic and free Merge can combine anything at any time, so that the DP can move in (13ii) before the whole derivation reaches at the phase level. Note that the operation (13vi) indicates that the head movement of R to  $v^*$  is “forming R with  $v^*$  affixed.” As a result, phasehood is activated at the copy of R because of feature inheritance of  $v^*$  to R. (13vii) indicates that complement of the ‘derived’ phase head (the copy of R) is transferred.

The next phase is C phase (14).

(14) The derivation of C phase

- (i) “who do you think read the book”
- (ii)  $\{\beta \text{ who}_i, \{\text{do}, \{\text{you}, \{v^*, \{\text{think (R)} \{\emptyset \{ \alpha \text{ who}_i \text{ T } \beta \} \} \} \} \} \} \}$

(15) The order of rules in (14)

- (i) Form  $T-\beta$  by EM
- (ii) IM of *who* in  $\alpha$
- (iii) Labeling of  $\alpha$  as  $\langle\phi, \phi\rangle$
- (iv)  $C \rightarrow \emptyset$ , so that *who* can remain in situ and still be accessible to IM in the next phase
- (v) Transfer

In this derivation, Merge operates totally cyclically and the free Merge is applied in (15ii). As a result, the label of  $\alpha$  can be determined as  $\langle\phi, \phi\rangle$  (This is what is called the Extended Projection Principle (EPP) effect). If (15ii) does not apply, there is no label of  $\alpha$  because T alone cannot be a label and the derivation crashes. The difference between C phase and  $v^*$  phase is the deletion of C. If C is deleted, T activates as phasehood, so that the transfer domain of this C phase is the complement of T. “All inflectional and functional properties of C are transmitted to T. All are active at T when C is deleted (Chomsky 2015: 11).” Furthermore, after the label of  $\alpha$  is determined as  $\langle\phi, \phi\rangle$ , *who* moves to the next phase the label of  $\alpha$  remains  $\langle\phi, \phi\rangle$  because of “phase level memory (Chomsky 2015:11).”

To sum up, Chomsky (2015) tries to show the parallelism between C and  $v^*$  phases though the detail of the operation is not the exactly same; C is deleted in C phases and head movement of R to  $v^*$  makes  $v^*$  invisible. What these operations do is make phase heads invisible. After feature inheritance, the non-phase head becomes the potential (derived) phase

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<sup>3</sup> Whether the root takes its complement or not is controversial in recent literature. See Alexiadou and Lohndal (2015) for a relevant discussion. Chomsky (2015) assumes here that root can take complement though the root moves to the categorizer to get its category.

head and when the phase head becomes invisible, the non-phase heads are activated as the phase head.

In this section, I have selectively summarized the assumptions put forward in Chomsky's recent works selectively. Based on these assumptions, in the next section, the problem of Chomsky (2015) is introduced.

### 2.3. External pair-merge of root to $v^*$

EKS (2016) argue that there is a problem in the cases which involve a bridge verb in Chomsky (2015). The examples are the derivation of ECM case in (16) and the derivation of bridge verb case in (17).

(16) He expects John to win

- a.  $\{v^*, \{\alpha DP_i, \{R, \{\beta DP_i \dots\}\}\}\}$
- b.  $\{\langle R_j, v^* \rangle, \{\alpha \langle \varphi, \varphi \rangle DP_i, \{R_j, \{\beta DP_i \dots\}\}\}\}$

(17) John thinks that he is intelligent.

- a.  $\{\varepsilon = ? \{\delta C, \dots\}, \{\text{think (R)}, \{\varepsilon \langle C, \dots \rangle\}\}\}$
- b.  $\{\langle R, v^* \rangle, \{\varepsilon \text{think (R)}, \{\delta C, \dots\}\}\}$

The order of operations in (16) is as follows: (i) external set-Merge of root(R) to its complement  $\beta$ , (ii) internal set-Merge of DP, (iii) external set-Merge of  $v^*$  with  $\alpha$ , reaching the phase level, and feature inheritance takes place, (iv)  $\alpha$  is labeled by  $\langle \varphi, \varphi \rangle$ , (v) R is raised by internal pair-Merge to  $v^*$  and  $v^*$  is affixed to R, so that  $v^*$  becomes invisible (16b), and the phasehood of  $v^*$  is activated at the copy of the R, (vi) Transfer of  $\beta$ . Thus in this case, the copy of the root is visible as phasehood.

In the case (17), if the complement of *think* is internally set-merged to the specifier of *think*, there are no relevant agreeing features with *think* and  $\delta$ , resulting in the labeling failure of  $\varepsilon$ . If the syntactic object whose label is  $\delta$  does not move to the specifier of *think*, the copy of R is invisible according to Chomsky (2015). Thus, the label of  $\varepsilon$  is the label of  $\delta$ , which is C.

However, EKS (2016) argue that the (in)visibility of the copy of R in Chomsky (2015) is paradoxical because it is visible for minimal search in the case of ECM/ transitive verb (i.e. R is active as a phase head after  $v^*$  is internally pair-merged with R) but invisible for minimal search in the case of bridge verb.<sup>4</sup> The copy R should be always visible for minimal search since the head movement in Chomsky (2015) is adjunction (internal pair-Merge), which creates another segment. However, the copy of R is invisible in the case of bridge verb in Chomsky (2015).

To solve this paradoxical situation, EKS (2016) propose that Merge, including set-/pair-Merge, can apply freely. In the case of bridge verbs, they propose the order of operations in (18).

<sup>4</sup> As for (in)visibility of DP, Chomsky (2013) notes that “[...] to take  $\alpha$  to be ‘in the domain’ if and only if every occurrence of  $\alpha$  is a term of D.” Put differently, EKS (2016) define as “an occurrence of  $\alpha$  is a sister-category merged to  $\alpha$  by set-Merge (EKS 2016: 91).”

- (18) John thinks that he will win
- (i)  $\langle R, v^* \rangle$
  - (ii)  $\{\langle R, v^* \rangle, \beta\}$
  - (iii)  $\{EA, \{\alpha \langle R, v^* \rangle, \beta\}\}$

The order of the rule is as follows; (i) external pair-Merge of R to  $v^*$ , (ii) external set-Merge of  $\langle R, v^* \rangle$  to  $\beta$  (the complement of R), (iii) external set-Merge of EA to  $\alpha$ . Note that  $v^*$  is invisible for the same reason in Chomsky (2015); pair-Merge of R to  $v^*$  makes  $v^*$  invisible and it follows that unvalued features of  $v^*$  is invisible for narrow syntax, so that we can derive weak phases without any stipulation. Thus, there are no visible unvalued features in this case. That is, there is no copy of root and there is no problem of (in)visibility of R.

#### 2.4. Pair-merge prior to feature inheritance

Nomura (2014) proposes that (i) pair-Merge can apply freely and (ii) uninterpretable features may remain unvalued as long as they are invisible at the CI interface.

For the case in (19), Nomura (2014) points out two problems: (i) uninterpretable features on R are not valued and (ii) if raising-to-object is optional, *what* in (19a) cannot extract because of Phase Impenetrability Condition (PIC).

- (19) “What do you think that Ken read?”
- a.  $\{\langle R_{[u\phi]}, v^*_{[\ ]} \rangle, \{\beta R_{[u\phi]}, \{\alpha \text{ what C \{Ken read what\}}\}\}\}$
  - b.  $\{\gamma \text{ what \{do \{you \{\langle R_{[\ ]}, v^*_{[u\phi]} \rangle, \{\beta R_{[\ ]} \{\alpha \text{ what C \{Ken read what\}}\}\}\}\}\}$

Nomura (2014) proposes that pair-Merge can apply freely and can apply prior to feature inheritance as shown in (19b). R and  $v^*$  can externally set-Merge freely but pair-Merge are applied prior to feature inheritance. Thus R does not have uninterpretable features and phasehood is not inherited by the copy of R. However, Nomura argues that regardless of feature inheritance, the copy of root is visible, so that the label of  $\beta$  is the copy of R. Thus, the copy of R is visible in the case of the bridge verb, which is discussed in section 2.3.

Another proposal by Nomura is that if it can apply freely, pair-Merge can be applied before set-Merge of  $\{R, DP\}$  in the case of unaccusatives and passives in (20)-(21).

- (20) Unaccusatives/Passives
- $$\{C, \{\delta DP_i, \{\gamma T, \{\beta DP, \{\alpha \langle R, v^* \rangle, DP_i\}\}\}\}\}$$

- (21) The derivation of unaccusatives/passives
- a. Form  $\langle R, v^* \rangle$  by Pair-Merge, losing the phase property of  $v^*$ :  $\langle R, v^* \rangle$
  - b. Form  $\langle R, v^* \rangle$ -DP by EM:  $\{\alpha \langle R, v^* \rangle, DP_\phi\}$
  - c. Form DP- $\alpha$  by IM:  $\{\beta DP_\phi, \{\alpha \langle R, v^* \rangle, DP_\phi\}\}$
  - d. Form T- $\beta$  by EM:  $\{\gamma T \{\beta DP_\phi, \{\alpha \langle R, v^* \rangle, DP_\phi\}\}\}$
  - e. DP- $\gamma$  by IM:  $\{\delta DP_\phi \{\gamma T \{\beta DP_\phi, \{\alpha \langle R, v^* \rangle, DP_\phi\}\}\}\}$
  - f. Form C- $\delta$  by EM, reaching the phase level:  $\{C_\phi \{\delta DP_\phi \{\gamma T \{\beta DP_\phi, \{\alpha \langle R, v^* \rangle, DP_\phi\}\}\}\}\}$
  - g. Inheritance of C to T:  $\{C \{\delta DP_\phi \{\gamma T_\phi \{\beta DP_\phi, \{\alpha \langle R, v^* \rangle, DP_\phi\}\}\}\}\}$
  - h. Labeling;  $\delta$  is labeled  $\langle \phi, \phi \rangle$ ,  $\beta$  and  $\alpha$  are labeled  $[R-v^*]$ .  $\{C \{\delta = \langle \phi, \phi \rangle DP_\phi \{\gamma T_\phi \{\beta DP_\phi, \{\alpha \langle R, v^* \rangle, DP_\phi\}\}\}\}\}$

In this derivation, the first step is pair-Merge of R to  $v^*$  and this operation makes uninterpretable features on  $v^*$  invisible, so that phase is deactivated.  $DP_i$  in (21) can move to [spec, TP] in the matrix clause. The distinction of weak/ strong phases (cf. Chomsky 2001) can be eliminated simply by assuming that pair-Merge applies freely.

Nomura (2015) furthermore proposes that (internal) pair-Merge of T to C (head movement) is possible but when C head has some phonological content such as *that*, it is impossible. The case is related with that-trace effect in (22).

(22)

- a. Who do you think read the book?
- b.  $\{\varepsilon = \langle \varphi, \varphi \rangle \text{ who } \{\delta \langle T_{[u\varphi]}, C \rangle, \{\gamma \text{ who } \{\beta T \{\alpha \text{ who } \{\langle R, v^* \rangle, \dots$
- c. \*Who do you think that read the book?
- d.  $\{\varepsilon \text{ who } \{\delta \text{ that, } \{\gamma \text{ who } \{\beta T \{\alpha \text{ who } \{\langle R, v^* \rangle, \dots$

Since uninterpretable features on T in  $\langle T, C \rangle$  in  $\delta$  are visible for minimal search, the label of  $\varepsilon$  is determined by  $\langle \varphi, \varphi \rangle$  in (22b). In (22d), however, since the phonological content of C is realized as *that*, pair-Merge is impossible and the label of  $\beta$  is not determined since T is too weak to serve as a label. Thus, the derivation crashes.

To sum up, EKS (2016) and Nomura (2014, 2015) propose the following hypotheses.

(23)

- a. Merge - set-Merge and Pair-Merge - applies freely, regardless of whether it applies externally or internally.
- b. Pair-Merge of R to  $v^*$  prior to feature inheritance makes uninterpretable features on  $v^*$  invisible.
- c. Pair-Merge of  $v^*$  prior to feature inheritance cancels the phasehood of  $v^*$ .

### 3. Proposal: external pair-merge of C to T

Based on EKS (2016) and Nomura (2014, 2015), I propose that external pair-Merge of C to T can derive the ‘proper’ improper movement.

(24) Pair-Merge (C, T) =  $\langle T, C_{[u\varphi]} \rangle$

(25)  $\{\dots \langle T, C \rangle, \dots \langle R, v^* \rangle, \dots$

Uninterpretable features on C becomes invisible by external pair-Merge and the phasehood is *de-phased* (i.e. phase is canceled) and Transfer does not apply at that point. The schema of de-phases is shown as in (25). In this case, the amalgam  $\langle T, C \rangle$  and  $\langle R, v^* \rangle$  are de-phased by external pair-Merge and the PIC has no effect on this phase.

#### 3.1. The argument of “invisibility” of phase heads

As I discussed in previous section, external pair-Merge of R to  $v^*$  makes  $v^*$  invisible, so that the phase of the  $v^*$  is de-phased. This mechanism comes from Chomsky (2015), arguing that when head movement takes place, say R moves to  $v^*$ ,  $v^*$  is affixed to the R and the R becomes the host in the structure. Chomsky (2015) and EKS (2016) argue that this movement

is internal to pair-Merge ( $\langle R, v^* \rangle$ ). Furthermore, EKS (2016) extends this idea to external pair-Merge of R to  $v^*$ . As the result of pair-Merge making the phase head invisible, the phasehood becomes invisible whether pair-Merge applies internally or externally. In the same way, I argue that external pair-Merge of C to T ( $\langle T, C \rangle$ ) makes phase head C invisible because of pair-Merge.

Another argument for the invisibility of phase heads can be induced from Chomsky (2004), which introduces pair-Merge for solving Adjunct Condition. According to Chomsky (2004), since extraction from the Adjunct phrases is ungrammatical (Adjunct Condition), we can say that introducing adjunct as pair-Merge makes the adjunct phrase invisible for narrow syntax.

The original insight of Chomsky (2004) regarding adjunction is as follows.<sup>5</sup>

“Given the basic properties of adjunction, we might intuitively think of  $\alpha$  as attached to  $\beta$  on a separate plane, with  $\beta$  retaining all its properties on the ‘primary plane,’ the simple structure (Chomsky 2004:117-118).”

An example of the Adjunct Condition is found in (26).

(26) Adjunct Condition: (Chomsky 2004, cf. Oseki 2015)<sup>6</sup>

- a. \*Who did Mary cry [<sub>ADJ</sub> after John hit  $\langle$ who $\rangle$ ] (Huang 1982:503)
- b. \*Which paper did you read Don Quixote [<sub>ADJ</sub> before filing  $\langle$ which paper $\rangle$ ] (Nunes and Uriagereka 2000:21)

Chomsky (2008) notes that “adjunct is not in the search domain of the probe.” This means that it is invisible for minimal search. Thus, pair-Merge can make syntactic objects invisible, regardless of the application of pair-Merge being internal or external.

To sum up, there is a way of making syntactic objects invisible; applying pair-Merge. Pair-Merge of XP to YP explains the Adjunct Condition in the sense of Chomsky (2004), and the (internal) pair-Merge of R to  $v^*$  is shown in Chomsky (2015), which results in deducing a derived phase head. Therefore, I propose that external/internal pair-Merge makes the second member of the pair invisible. As a consequence, I argue that external pair-Merge of C to T de-phases the phase on C that becomes invisible.

### 3.2. Tough constructions in English

An example of ‘proper’ improper movement is the *tough*-construction in English (Obata and Epstein 2012). In (27), *John* moves from the embedded object position to the matrix subject. This movement is controversial because when *John* moves from [spec, CP] to [spec, TP], the movement is from an A’-position to an A-position, which is improper movement (Chomsky 1973, Fukui 1993 among others).

<sup>5</sup> Terje Lohndal (p.c.) points out that in Chomsky (2004), Adjunct is the example of external pair-Merge of XP and YP though it is different type of external pair-Merge of  $X^0$  and  $Y^0$ . I leave this topic for future research.

<sup>6</sup> Oseki (2015) seeks another possibility of Adjunct Condition. I would like to mention here that adjunct phrases are opaque, namely, invisible for narrow syntax.

(27)

- a. John is easy to please.  
 b.  $[_{CP} [_{TP} \text{John}_i [_{T} [\text{easy} [_{CP} \text{John}'_i C [_{TP} \text{PRO} [\text{to} [_{v^*P} \text{please John}_i]]]]]]]]]]]$   
           A           ←       A'           ←                   A

When external pair-Merge of C to T is applied, there is no [spec, CP] or [spec, TP] but just [spec, <T, C>], and C in the embedded clause becomes invisible for minimal search. The phase is de-phased as shown in (28). Moreover, the unvalued Case on *John* is not valued within the embedded clause since the external pair-Merge of T/R to C/v\* is applied. Thus, it is possible to freely move *John* via internal set-Merge. At the last point in the derivation of (29i), *John* can move to the subject position. In this case, phasehood is de-phased twice.

(28)

- a. John is easy to please.  
 b.  $[_{CP} [_{TP} \text{John}_i [_{T} [\text{easy} [_{CP} \text{John}'_i C [_{TP} \text{PRO} [\text{to} [_{v^*P} \text{please John}_i]]]]]]]]]]]$   
 c.  $\{C, \text{John}_i, \{T, \{\text{easy}, \{\gamma \text{John}_i, \{\text{PRO}, \{\beta \langle T, C \rangle, \{\alpha \langle R, v^* \rangle, \text{John}_i\}\}\}\}\}\}\}$

(29) The derivation of (28)

- a. Pair-Merge of v\* and R (*please*):  $\langle R, v^* \rangle$   
 b. EM of <R, v\*> and *John*:  $\{\alpha \langle R, v^* \rangle, \text{John}\}$   
 c. Pair-Merge of C and T: <T, C>:  $\langle T, C \rangle$   
 d. EM of <T, C> and  $\alpha$ :  $\{\beta \langle T, C \rangle, \{\alpha \langle R, v^* \rangle, \text{John}\}\}$   
 e. EM of PRO and  $\beta$ :  $\{\text{PRO}, \{\beta \langle T, C \rangle, \{\alpha \langle R, v^* \rangle, \text{John}\}\}\}$   
 f. IM of *John*:  $\{\gamma \text{John}_i, \{\text{PRO}, \{\beta \langle T, C \rangle, \{\alpha \langle R, v^* \rangle, \text{John}_i\}\}\}\}$   
 g. EM of *easy*:  $\{\text{easy}, \{\gamma \text{John}_i, \{\text{PRO}, \{\beta \langle T, C \rangle, \{\alpha \langle R, v^* \rangle, \text{John}_i\}\}\}\}\}$   
 h. EM of T:  $\{T, \{\text{easy}, \{\gamma \text{John}_i, \{\text{PRO}, \{\beta \langle T, C \rangle, \{\alpha \langle R, v^* \rangle, \text{John}_i\}\}\}\}\}\}$   
 i. IM of *John*:  $\{\text{John}_i, \{T, \{\text{easy}, \{\gamma \text{John}_i, \{\text{PRO}, \{\beta \langle T, C \rangle, \{\alpha \langle R, v^* \rangle, \text{John}_i\}\}\}\}\}\}\}$   
 j. EM of C:  $\{C, \{\text{John}_i, \{T, \{\text{easy}, \{\gamma \text{John}_i, \{\text{PRO}, \{\beta \langle T, C \rangle, \{\alpha \langle R, v^* \rangle, \text{John}_i\}\}\}\}\}\}\}\}$

Note that in the case of internal pair-Merge after feature inheritance, uninterpretable features in the amalgam  $\langle T_{[u\phi]}, C_{[ ]} \rangle$  are visible for minimal search because this structure shows that C is affixed to T (i.e., T is the host of the object). In the case of internal pair-Merge prior to feature inheritance and external pair-Merge, however, the locus of the uninterpretable features and phasehood of C/v\* are invisible since they are affixed to non-phase heads.

#### 4. A problem: overgeneration?

The Free Merge-based Approach (or Merge  $\alpha$  approach)<sup>7</sup> implies that Merge allows syntactic objects to combine anything unless they violate a computational efficiency, such as the Extension condition, no tampering condition (see section 2). Potentially, the Merge  $\alpha$  approach can generate ‘wrong’ derivations (i.e. a noun head selects a verb head or unvalued features on lexical head remain unvalued.). In this model, interface conditions have to select ‘grammatical’ derivations, which is an independent principle from narrow syntax.

<sup>7</sup> See Boeckx (2015) for relevant discussions.



As is seen in section 4, I showed that  $\langle T, C \rangle$  is realized as the infinitival marker *to*. In this proposal, T itself is not defective but the amalgam  $\langle T, C \rangle$  is the defective T. The example of (32) is ECM construction in English.

(32) ECM

- a. He expects John to win.
- b.  $\{C, \{he_i, \{T, \{he_i, \{\gamma \langle R, v^* \rangle, \{\beta \text{John}_j, \{R, \{\alpha \langle T, C \rangle, \text{John}_j, \{\text{win}\}}\}}\}}\}}\}}\}$

In this analysis,  $\langle T, C \rangle$  is a de-phased head and *John* raises to object in the matrix clause. The label of  $\alpha$  is  $\langle T, C \rangle$ , namely, *to* in (32). I propose here that  $\langle T, C \rangle$  is sufficient for serving as a label as well as the amalgam  $\langle R, v^* \rangle$  can serve as a label according to Chomsky (2015). In general, we can say that R/T(non-phase head) is too weak to serve as a label but the amalgam of  $\langle \text{non-phase head, phase-head} \rangle$  can serve as a label.

If  $\langle T, C \rangle$  is realized as *to* in English, ECM, raising and control construction in English can be unified in the same analysis.

(33)

- a. (i) I expected John to win  
(ii)  $\{ \dots \{\beta \langle R, v^* \rangle, \{\text{John}_i, \{R, \{\text{John}_i, \{\alpha \langle T, C \rangle, \dots\}}\}}\}}\}$
- b. (i) John seems to be happy  
(ii)  $\{ \dots \{\text{John}_i, \{\beta \langle R, v^* \rangle, \{\text{John}_i, \{\alpha \langle T, C \rangle, \dots\}}\}}\}$
- c. (i) John hopes to leave  
(ii)  $\{ \dots \{\text{John}_i, \{\beta \langle R, v^* \rangle, \{\text{John}_i, \{\alpha \langle T, C \rangle, \dots\}}\}}\}$
- d. (i) John persuaded Harry to leave  
(ii)  $\{ \dots \{\text{John} \{\beta \langle R, v^* \rangle, \{\text{Harry}_i, \{R, \{\text{Harry}_i, \{\alpha \langle T, C \rangle, \dots\}}\}}\}}\}$

All cases show that syntactic objects in the specifier of  $\langle T, C \rangle$  are internally merged to the next derivation and the labeling problem does not arise. If the position that is equivalent to specifier of the  $\langle T, C \rangle$  is filled by DP, the structure is  $\{XP, YP\}$  and minimal search cannot find the prominent LI: it fails to determine the label. However, if the DP moves to the higher position, the structure of  $\alpha$  is  $\{H, YP\}$ , where H is  $\langle T, C \rangle$ . Then there is no labeling failure. In (33a), since *John* moves to what is called [spec, RP], there is no visible syntactic object in [spec,  $\langle T, C \rangle$ ] because minimal search cannot detect *John*, the lower copy. The label of  $\alpha$  is  $\langle T, C \rangle$  and the label of the  $\beta$  is  $\langle R, v^* \rangle$ . The same analysis can apply to raising construction (33b) and control constructions (33c). I assume that control constructions includes NP-movement, which is identical to the raising construction according to Hornstein's (1999) analysis. The movement theory of control (obligatory control) is the null hypothesis in my analysis in that we can get the correct derivations in these constructions. In Hornstein (1999), he assumes that (i)  $\theta$ -roles are features on verbs, (ii) Greed is Enlightened Self-Interest, (iii) a D/NP 'receives' a  $\theta$ -role by checking a  $\theta$ -feature of a verbal/predicative phrase that it merges with, (iv) there is no upper bound on the number of  $\theta$ -roles a chain can have, and (v) sideward movement is permitted (Hornstein 1999:78). The representation of the movement of control is as follows.

(34)

- a. John hopes to leave.
- b.  $[_{TP} \text{John} [_{VP} \text{John} [_{\text{hopes}} [_{TP} \text{John} \text{to} [_{VP} \text{John} \text{leave}]]]]]]]$

This derivation shows that *John* firstly merges with the verb *leave* and checks its  $\theta$ -role from the verb. Then, it moves to [spec, TP] of the embedded clause and again is raised to [spec, VP] to check the external  $\theta$ -features from the verb *hope*. Lastly, *John* moves to [spec, TP] of the matrix clause and gets nominative case there.

In raising construction in (33b), raising verbs are assumed to be the form  $\langle R, v^* \rangle$ , so that there are no visible uninterpretable features on  $v^*$ , repeated here as (35).

(35)

- a. John seems to be happy
- b.  $\{ \dots \{ \text{John}_i, \{ \beta \langle R, v^* \rangle, \{ \text{John}_i, \{ \alpha \langle T, C \rangle, \dots$

First, *John* moves from the embedded [spec,  $v^*P$ ] to [spec,  $\langle T, C \rangle P$ ], Then it moves to [spec,  $\langle R, v^* \rangle$ ] and then [spec, TP] of the matrix clause. There is no place for *John* to be case-valued until it reaches to the matrix [spec, TP] because of the de-phasing by external pair-Merge of  $\langle R/T, v^*/C \rangle$ . In addition to Hornstein's (1999) analysis, if we assume that  $\langle T, C \rangle$  and  $\langle R, v^* \rangle$  serves as a label, there are no labeling problems as I mentioned before. Then, we can analyze raising construction and (obligatory) control construction here in the same way.

### 5.2. There- constructions: Merge-over-Move principle

Another consequence is relevant to the labeling problem of expletive constructions. Goto (2014) shows that the label of  $\beta$  in (36) is T, which is an infinitival marker. However, it is not determined by *to* assuming that “T is too weak to serve as a label” in the framework of Chomsky (2015).

(36)  $\{ \gamma \text{ there}, \{ \text{is}, \{ \text{likely}, \{ \beta \text{ to}, \{ \text{be}, \{ \alpha \text{ a man, in the room} \} \} \} \} \} \}$

Epstein et al. (2014) show that along with successive cyclic A'-movement as “obligatory exit” from intermediate [spec, CP] position to avoid “no-label” situation according to Chomsky (2013), they suggest that A-movement also can be regarded as successive cyclic movement in term of labeling. The example is as in (37).

(37)

- a. \*There is likely  $[_{TP} \text{ a man}_i \text{ to be a man}_i \text{ in the room}]$ .
- b.  $\text{There}_i \text{ is likely } [_{TP} \text{ there}_i \text{ to be a man in the room}]$ .

Epstein et al. (2014) argue that at the derivational stage of the embedded TP, [spec, TP] is not filled and EPP is not satisfied yet. There are two possible derivations; (i) *a man* moves to [spec, TP] by internal set-Merge or (ii) the expletive *there* is externally set-Merged. Chomsky (2000) argues that Merge is simpler than Move since the definition of Move was more complex than Merge. This is called the Merge over Move principle. Chomsky (2000) solves these phenomena by assuming ‘subarray’ and defining ‘phases.’ Phases are defined as lexical subarrays, which are assembled by a lexical array. If a subarray consists of *that, will, be, a man, in, the, room*, [spec, TP] is filled by internal set-Merge of *a man*. There is no possibility of set-Merge of *there* because there is no lexical item *there* in that subarray.

(38)

- a. There is a possibility [<sub>CP</sub> that a man<sub>i</sub> will be ~~a man~~<sub>i</sub> in the room].
- b. A possibility is [<sub>CP</sub> that there will be a man in the room].

However, Epstein et al. (2014) argue that there is no support to assume the Merge over Move principle since Merge, including internal Merge (which is called Move in Chomsky (2000)), can apply freely. Thus, Merge is the simplest operation: Merge ( $\alpha$ ,  $\beta$ ) =  $\{\alpha, \beta\}$ . Furthermore, the subarray approach can be eliminated from the perspective of labeling theory. Recall the example of (37), repeated here as (39).

(39)

- a. \*There is likely [ <sub>$\alpha$</sub>  a man<sub>i</sub> to be ~~a man~~<sub>i</sub> in the room].
- b. There<sub>i</sub> is likely [ <sub>$\alpha$</sub>  ~~there~~<sub>i</sub> to be a man in the room].

A *man* moves to the embedded [spec, TP] in (39a), but minimal search cannot find a prominent element. Thus, the structure remains unlabeled. However, there is no problem for labeling in (39b). In  $\alpha$ , *there* is a lower copy and minimal search cannot find it. Thus, the label of  $\alpha$  is determined as T according to Epstein et al. (2014). They argue that “[i]f *there* bears at least one  $\phi$ -feature and undergoes further movement, then minimal search finds the only visible head T as the label of  $\alpha$  (Epstein et al. 2014:471).” However, Chomsky (2015) suggests that T in English is too weak to serve as a label. How to solve this labeling problem?

As I mentioned before, if the proposal that external pair-Merge of C to T is possible, the problem can be solved. As I proposed, we take infinitival marker *to* as  $\langle T, C \rangle$  and this serves as a label along with  $\langle R, v^* \rangle$ , while R is too weak to serve as a label. Thus, we can label  $\alpha$  to be  $\langle T, C \rangle$  in (39b).

In (40a), the syntactic object  $\alpha$  is  $\{a\ man, \langle T, C \rangle P\}$ , which is an  $\{XP, YP\}$  structure. In  $\langle T, C \rangle$ , C is invisible and pair-Merge is applied prior to feature inheritance, so that uninterpretable features on  $\langle T, C \rangle$  is invisible. The labeling failure arises in the structure of syntactic object of *a man* and *to* (=  $\langle T, C \rangle$ ) which have no relevant features.

(40)

- a. \*There is likely  $\{\alpha=?\ a\ man_i\ to\ be\ \{a\ man_i,\ in\ the\ room\}\}$
- b. There<sub>i</sub> is likely  $\{\alpha=\langle T, C \rangle\ \del{there}_i\ to\ be\ \{a\ man,\ in\ the\ room\}\}$

In (40b), however, *there* moves to the specifier of TP in the matrix clause and there is no labeling failure of  $\alpha$ . Thus, the label of  $\alpha$  is *to*. As such, we can overcome the Merge over Move principle and the subarray approach in terms of labeling requirements and the free application of pair-Merge as well as set-Merge.

In this sub-section, I showed that the labeling failure approach overcame Merge-over-Move stipulation by applying external pair-Merge of C to T that is realized as infinitival marker *to* in English. I argued that the finite T in English is “too weak to serve as a label” but infinitival *to*, which is an amalgam  $\langle T, C \rangle$ , can serve as a label.

## 6. Concluding remarks

In the framework of the Minimalist Program, eliminating stipulations is the aim in the sense of strong minimalist thesis. The Merge  $\alpha$  approach becomes the most desirable approach and

interface conditions ‘filter out’ derivations other than the optimal one. Thus, the ‘overgeneration’ problems are solved by interface conditions, although the detail is still not clear.

In this paper, I put forward the proposal that external pair-Merge of C to T guarantees desirable derivations without any additional mechanism. Specifically, I propose that there is no improper movement in *tough*-construction, assuming that set-/pair-Merge can apply freely. If external pair-Merge is applied prior to feature inheritance, uninterpretable features become invisible and the phasehood is canceled (*de-phased*).

Moreover, the amalgam <T, C> is realized as infinitival marker *to* in English and the complementizer *that* in English must be introduced in the derivations by set-Merge since it has its own phonological content as a C head. <T, C> can label its syntactic object, while the amalgam <R, v\*> can label its syntactic object. Amalgams <non-phase head, phase head> are visible for minimal search but the phase heads that are inside amalgams are invisible for minimal search.

The timing of pair-Merge of phase heads and non-phase heads is key in derivations, creating some different patterns (e.g. active/passive sentences, finite clause/non-finite clauses, etc.). Language variation can be partly deduced from the timing of the Merge of phase heads and non-phase heads as well as pre-syntactic feature bundles can be the loci of the language variation. What exactly the variety brings is not clear and it needs further research.

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## Negative Concord Items in coordinate structure

Ryoichiro Kobayashi and Taihei Asada

Whether syntactic verb raising exists in Japanese has been a topic of debate in the literature of Japanese syntax. Due to its agglutinative and strict head-finality, such verb raising, if it exists at all, does not show any overt effects on the surface order of elements. In this paper, we examine the distribution of Negative Concord Items (NCI) in Non-Constituent Coordination (NCC) in Japanese. We argue against Koizumi's (2000) verb-raising approach to NCI, since it makes an incorrect prediction on the distribution of NCIs inside coordinate structure. We conclude that it should be analyzed under the gapping approach proposed by Fukui and Sakai (2003). First, we introduce some seemingly problematic data for the gapping analysis, which turn out to be a counterexample against the verb-raising analysis. Following Kato's (2006) representational approach to the Coordinate Structure Constraint (CSC), we argue that the gapping approach correctly captures the distribution of NCIs, while the verb-raising analysis reaches a dead end. The conclusion of this paper supports Fukui and Sakai's argument that there is no string-vacuous overt verb raising in Japanese.

### *1. Introduction: NCIs in NCC*

Since Koizumi (2000) it has been hotly debated whether Japanese has syntactic verb raising, which must be string-vacuous since Japanese is a strictly head-final language. In Non-Constituent Coordination (NCC; 1a), Koizumi assumes that verb-to-Tense-to-Comp (V-T-C) raising occurs in Narrow Syntax, as in (1b). On the other hand, Fukui and Sakai (2003) argue that gapping occurs in the first conjunct in deriving NCC with no recourse to syntactic verb raising, as in (1c). This section aims to point out that the verb-raising approach encounters a problem concerning the licensing of Negative Concord/Polarity Items in NCC. When NCC contains XP-*sika* 'XP-except,' it becomes ungrammatical, as in (2). The sentence in (2) can be schematically represented under Koizumi's verb-raising approach as (3a), and under the gapping analysis as (3b).



## 2. The component structures and NCC

Kato (2006) convincingly shows that the Coordinate Structure Constraint (CSC) is a representational constraint that must be satisfied in LF. To briefly summarize his discussion, a coordinate structure is well-formed only when each of the *component structures* satisfies LF-requirements of grammaticality. The component structure is defined as a structure composed of one of the conjuncts and the material that is not included in the coordinate structure (Kato 2006:3). A typical CSC-violating example can be found in (5), whose ungrammaticality is explained under Kato's proposal: Sentences such as (5) become ungrammatical since one of the component structures - (6) - violates the LF-constraints on vacuous quantification.

(5) \*What<sub>*i*</sub> did Mary [send *t<sub>i</sub>* on Monday] and [receive the parcel on Wednesday]?

- (6) Component structures of (5):  
 a. what did Mary send *t* on Monday  
 b. \*what did Mary receive the parcel on Wednesday

(Kato 2006:3)

Given that the licensing of NCIs is an LF phenomenon, a natural suspect for the source of ungrammaticality of NCI coordinate items is its component structure. Under Koizumi's (2000) verb-raising approach, V-NEG-T amalgams are created due to the Head Movement Constraint. Since the V-NEG-T, *tabe-nakat-ta* 'eat-NEG-PAST' in C (or in T) is shared by each conjunct, the relevant component structures will be something like (7).

- (7) Component structures of (2) under the verb-raising approach (*tabe-nakat-ta* is shared):  
 a. George-wa ringo-sika kinoo tabe-nakat-ta  
 George-TOP apple-except yesterday eat-NEG-PAST  
 'George only ate apples.'  
 b. Mary-wa banana-sika kyoo tabe-nakat-ta  
 Mary-TOP banana-except today eat-NEG-PAST  
 'Mary only ate bananas.'

(7) predicts (2) to be grammatical, which is not the case. I propose, on the other hand, that the gapping approach correctly explains the relevant ungrammaticality of (2) above.

## 3. Two types of NCIs in Japanese

Before we turn to the gapping analysis on NCC, let us briefly review two well-established facts concerning NCIs in Japanese. There is another type of NCI, which consists of *wh* plus the focus particle *-mo*. They cannot appear without NEG that agrees with its [neg] feature.

- (8) a. \*Dare-mo ki-ta.  
 WH-FOC come-PAST  
 Lit. ‘Anyone came’
- b. Dare-mo ko-nakat-ta.  
 WH-FOC come-NEG-PAST  
 ‘No one came.’

Kuno (2008) proposes that NCIs are licensed via agreement of [neg] features on it and clausemate NEG, as illustrated in (9).

- (9) a. ... NEG<sub>probe</sub> ... NCI  
 [neg] [foc][neg][one]  
 | \_\_\_\_\_ ↑ Agree
- b. ... NEG ... NCI  
 [neg] [foc][neg][one]  
 ↑ the locus of Negation

Interestingly, WH-mo-type NCIs such as *dare-mo* ‘anyone’ and *nani-mo* ‘anything’ can be licensed in an elliptical fragment answer, which is one of the diagnostics of NCIs (Vallduví 1994).<sup>1</sup>

- (10) Q: Nani-o mi-ta-no?  
 WH-ACC see-PAST-Q  
 ‘What did you see?’
- A: Nani-mo mi-nakat-ta  
 WH-FOC<sub>[NCI]</sub> see-NEG-PAST  
 ‘Nothing.’

cf. Q: What did you see?

A: \*Anything<sub>[NPI]</sub>.

(Adapted from Watanabe 2004:564)

Why is an elliptical answer possible even though there is no negative antecedent *mi-nakat-ta* ‘didn’t see’ in the preceding context? Kuno (2008) argues, following Giannakidou (2006), that the semantics of questions provide a solution: A question denotes the set of its true answers that also contains a negative proposition (Karttunen 1977). Therefore, an elliptical answer can be derived from its non-elided answer counterpart in the domain of true answers.

<sup>1</sup> The basic diagnostics for NCIs (Vallduví 1994, Giannakidou 2006 and others):

- a. Ability to appear in nonnegative contexts
- b. Ability to appear in preverbal position
- c. Ability to be modified by expressions like almost
- d. Ability to be used as an elliptical answer
- e. Clause-boundedness

Some may say that this line of argument may not distinguish NCIs from Negative Polarity Items, which cannot be licensed in elliptical answers. Kuno (2008:209) notes that Giannakidou's (2006) analysis is compatible with the fact that elliptical answers are not possible with Negative Polarity Items. Since a Negative Polarity Item must move out of the elided constituent, it ends up outside the c-commanded domain of NEG, while the NCI can be licensed due to its intrinsically negative nature.

- (11) a. What did you see?  
 b. \*Anything.  
 c. \**Anything* [~~I didn't see anything~~].  
           ↑ \_\_\_\_\_|

In the next section, we move on to our proposal, which is compatible with, and lends credence to Fukui and Sakai's (2003) gapping analysis.

#### 4. Proposal

Interestingly, the *wh-mo* type of NCI may readily be licensed in similar constructions to (2), as in (12).<sup>2</sup>

- (12) [Taro-ga            nani-mo            mik-kakan]    to  
       Taro-NOM        WH-FOC            3-days        CONJ  
       [Hanako-ga       nani-mo            yok-kakan]    tabe-nakat-ta  
       Hanako-NOM    WH-FOC            4-days        eat-NEG-PAST  
       'Taro (didn't eat) anything for 3 days, and Hanako didn't eat anything for 4 days.'

We propose that the relevant acceptability arises from the *wh-mo* as an NCI: While *wh-mo* can be licensed through concordance of [neg] between *wh-mo* and NEG, *XP-sika* needs to be licensed under the scope of NEG. The prediction is borne out that *XP-sika* cannot be licensed or become marginal at the very least as an elliptical answer.

- (13) Q: Dare-ga            ki-ta-no?  
       WH-NOM            come-PAST-Q  
       'Who came?'  
       A: \*?Taro-sika    ~~ko-nakat-ta~~.<sup>3</sup>  
       Taro-except    come-NEG-PAST  
       'Only Taro.'

<sup>2</sup> The reviewer pointed out that sentences like (12) still need a long pause between conjuncts. Moreover, it was questioned as to whether the readers parse the sentence as a Right-Node-Raising like sentence without *-to*, which is perfectly grammatical in Japanese. We agree that some pause makes the sentence sound better. However, there is no way to test whether (12) is parsed without *-to*. I assume that (12) is a genuine NCC for argument's sake.

<sup>3</sup> The same reviewer noted that adding certain lexical items such as *zannennagara* 'unfortunately' improves the sentence. We agree with this judgment, but such words contain somewhat negative flavor. Therefore, we believe that it does not affect the discussions in this paper.

A: Taro-sika ko-nakat-ta.  
 T.-except come-NEG-PAST  
 ‘Only Taro came.’

XP-*sika* cannot be licensed under elided NEG. In (14), although the elliptical answer has its negative antecedent, the fragment answer is ungrammatical.

(14) Q: Dare-ga ko-nakat-ta-no?  
 WH-NOM come-NEG-PAST-Q  
 ‘Who didn’t come?’

A: \*Taro-sika ~~ko-nakat-ta~~.  
 Taro-except come-NEG-PAST  
 ‘Only Taro.’

We assume that XP-*sika* shows parallelism between English Negative Polarity Items like *anybody*, which can never be licensed in an elliptical answer. Note that in Japanese, XP-*sika* can be licensed in the subject position (Kato 1985).

(15) a. Dare-ga ki-ta-no?  
 WH-NOM come-PAST-Q  
 ‘Who came?’

b. \*?Taro-sika.  
 Taro-except  
 ‘Only Taro.’

c. \*Taro-sika [~~Taro-sika ko-nakat-ta~~.]  
 ↑ \_\_\_\_\_|

Given these observations, we argue that XP-*sika* itself is not negative in nature, following Kuno (2011) and others. Although some classify XP-*sika* as a NCI since it cannot be licensed without syntactic NEG, we assume that *wh-mo* and XP-*sika* minimally differ in that the latter always requires overtly pronounced NEG. It automatically follows that XP-*sika* cannot be rescued in an elliptical fragment answer in (15), while *wh-mo* type NCIs can be, as in (16).

(16) Nani-o mi-ta-no?  
 WH-ACC see-PAST-Q  
 ‘What did you see?’

a. <sup>ok</sup>Nani-mo.  
 WH-FOC  
 ‘Nothing.’

b. <sup>ok</sup>Nani-mo [~~Nani-mo<sub>[neg]</sub> mi-nakat<sub>[neg]</sub>-ta~~].  
 ↓ \_\_\_\_\_| licensed via agreement in (9)

↑ \_\_\_\_\_|

In the next section, we further show that the proposal above correctly captures the distribution of XP-*sika* and *wh-mo* type NCIs in a coordinate structure.

### 5. Focus movement of XP-*sika* and the component structure

Let us return to the data in (1), repeated here as (17). The schematic representation would be something like (18) under the verb-raising approach. There is no gapping in the first conjunct.

- (17) \*George-wa ringo-*sika* kinoo to  
 George-TOP apple-except yesterday CONJ  
 Mary-wa banana-*sika* kyoo tabe-*nakat*-ta  
 Mary-TOP banana-except today eat-NEG-PAST  
 ‘George only (ate) an apple yesterday, and Mary only ate a banana today.’

- (18) [TP SU [<sub>NegP</sub> XP-*sika* [VP... t<sub>V</sub>] t<sub>NEG</sub>] t<sub>T</sub>]&[TP SU [<sub>NegP</sub> XP-*sika* [VP... t<sub>V</sub>] t<sub>NEG</sub>] t<sub>T</sub>] V-NEG-T  
 |\_\_\_\_\_|\_\_\_\_\_||\_\_\_\_\_|\_\_\_\_\_↑

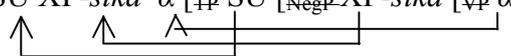
We have already noted that Koizumi’s (2000) analysis incorrectly predicts that sentences like (17) become acceptable since the component structures in (19) both satisfy grammatical constraints.

- (19) Component structures of (17) under the verb-raising approach:  
 a. George-wa ringo-*sika* kinoo tabe-**nakat**-ta  
 George-TOP apple-except yesterday eat-NEG-PAST  
 ‘George ate only apples yesterday.’  
 b. Mary-wa banana-*sika* kyoo tabe-**nakat**-ta  
 Mary-TOP banana-except yesterday eat-NEG-PAST  
 ‘Mary ate only bananas yesterday.’

On the other hand, the gapping analysis fully explains the deviance of (17) with XP-*sika*. It is schematically represented in (20), where gapping occurs in the first conjunct. In order for the ellipsis of identical V, NEG and T to occur, the elements inside TP, NegP and VP, including the subject and XP-*sika*, must be extracted from them, precisely what occurs in elliptical answers with regular NCIs. The ungrammaticality stems from XP-*sika* being unlicensed outside the scope of NEG in the first conjunct. The component structures of (20) are exemplified in (21).<sup>4</sup>

<sup>4</sup> It does not affect the argument here even if we assume that XP-*sika* cannot be licensed by covert NEG that is elided, say without [focus] features, while *wh+mo* can. The component structures of (2) under this line of argument would be (i).

- (i) Component structures of (2) under the gapping approach:  
 a. \*George-wa ringo-*sika* kinoo tabe-*nakat*<sub>[covert]</sub>-ta  
 George-TOP apple-except yesterday eat-NEG-PAST  
 Intended: ‘George ate only apples yesterday.’  
 b. Mary-wa banana-*sika* kyoo tabe-*nakat*-ta  
 Mary-TOP banana-except today eat-NEG-PAST

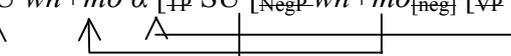
(20) [SU XP-*sika*  $\alpha$  [<sub>TP</sub> SU [<sub>NegP</sub> XP-*sika* [<sub>VP</sub>  $\alpha$  V] NEG] T]] &  
 [SU [<sub>NegP</sub> XP-*sika* [<sub>VP</sub>... V] NEG] T]]

(21) a. \*George<sub>i</sub>-wa ringo-*sika*<sub>j</sub> kinoo<sub>k</sub> [TP *t*<sub>i</sub> [<sub>NegP</sub> *t*<sub>j</sub> [<sub>VP</sub> *t*<sub>k</sub> tabe-**nakat**-ta]]]  
 George-TOP apple-except yesterday eat-NEG-PAST  
 Intended: ‘George ate only apples yesterday.’

b. Mary-wa [<sub>NegP</sub> banana-*sika* kyoo tabe-**nakat**-ta]  
 Mary-TOP banana-except today eat-NEG-PAST  
 Intended: ‘Mary ate only bananas today.’

Next, let us re-examine the data in (12), repeated below as (22), which can be schematically represented as (23). Just like the other NCCs, gapping may occur in the first conjunct under identity. Although *wh-mo* ends up outside the scope of NEG in the first conjunct, the NCI can be licensed via agreement with a [neg] feature on NEG.

(22) [Taro-ga nani-*mo* mik-kakan] to  
 Taro-NOM WH-FOC 3-days CONJ  
 [Hanako-ga nani-*mo* yok-kakan] tabe-**nakat**-ta  
 Hanako-NOM WH-FOC 4-days eat-NEG-PAST  
 ‘Taro (didn’t eat) anything for 3 days, and Hanako didn’t eat anything for 4 days.’

(23) [SU *wh+mo*  $\alpha$  [<sub>TP</sub> SU [<sub>NegP</sub> *wh+mo*<sub>[neg]</sub> [<sub>VP</sub>  $\alpha$  V] NEG<sub>[neg]</sub>] T]] &  
 [SU [<sub>NegP</sub> *wh+mo*<sub>[neg]</sub> [<sub>VP</sub>... V] NEG<sub>[neg]</sub>] T]]

(24) Component structures of (22) under the gapping approach:

a. Taro<sub>i</sub>-ga nani-*mo*<sub>j</sub> mik-kakan<sub>k</sub> [TP *t*<sub>i</sub> [<sub>NegP</sub> *t*<sub>j</sub> [<sub>VP</sub> *t*<sub>k</sub> tabe-**nakat**-ta]]]  
 Taro-NOM WH-FOC 3-days eat-NEG-PAST  
 ‘Taro didn’t eat anything for 3 days.’

b. Hanako-ga [<sub>NegP</sub> nani-*mo* yok-ka-kan tabe-**nakat**-ta]  
 Hanako-NOM WH-FOC 4-days eat-NEG-PAST  
 ‘Hanako didn’t eat anything for 4 days.’

Licensing of *wh-mo* is done via agreement of [neg] features between the NCI and NEG; hence the relevant NCI, *wh-mo*, need not remain in-situ within the scope of NEG. Therefore, the gapping approach correctly predicts that sentences like (22) become grammatical. Whatever analysis on Negative Concord we take, this is empirically clear that *wh-mo* does not necessarily need overt NEG, as long as the sentence satisfies prerequisites for ellipsis, as in (24).

## 6. Conclusions

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‘Mary ate only bananas yesterday.’

The discussions above support Fukui and Sakai's (2003) gapping approach to NCC: It shows that Koizumi's (2000) verb-raising analysis fails to explain the distribution of these NCIs in Japanese since it does not distinguish the component structures of grammatical and ungrammatical NCC. Although the discussions in this paper have left open many important issues, we hope to have shown that the existence of syntactic verb raising in Japanese NCC is suspicious. Those who support the verb-raising analysis must at least take into consideration the component structure analysis of a coordinate structure.

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## **Negotiating the action done by mothers' reparative repetitions**

Carla Cristina Munhoz Xavier

Following the interactional phonetics and the Conversation Analysis methodological approaches, this study examines the interactional and linguistic organization of repair in Brazilian Portuguese conversations between 6 mothers and their children (mean age 2,5). This is an investigation on how mothers and children negotiate the action done by the mother's lexical repetition of the child's previous turn. The results show that children learn repair initiation in phases, and that the ability to understand mothers' repetitions addressing pronunciation problems comes before the ability to understand repetitions that address problems of lexical choice.

### *1. Introduction*

Breakdown in communication in mother-child interactions is no trivial matter. However, mothers can let mistakes pass. If the mothers are in a position to notice that something is 'wrong' they might have a good enough understanding of what was said by the child to simply ignore it and allow the conversation to continue, just like in any conversation between adults (Schegloff et al. 1977:380). This is captured in extract 1. Here, mother and child are playing with a bubble gun and mother does a known-answer question (Koole 2010) to check if the child knows that they are playing with bubbles.

**Extract 1 (cigu bolinha de sabão 0:10-0:20)**

- 01-M: como qui chama issu  
*how is this one called*
- 02-C: é::  
*uhm::*
- 03- (0.4)
- 04-C: **sabãw dzi bɔ'liɲa**  
*soap bubble*
- 05-M: 'sabãw dzi bɔ'liɲa,  
*soap bubble ((meaning bubble))*
- 06- (0.6)
- 07-M: **servi**  
*it works*

In the example above (Extract 1), the mother chooses to ignore the fact that the child has swapped the nouns in *bolinha de sabão* to *sabão de bolinha* (see line 04, 'sabãw dzi bɔ'liɲa 'soup bubble') by repeating the child's 'wrong' turn in line 05 (*sabão dzi bolinha* 'soup bubble'). In this example, however, what is really striking is the mother's stance towards her child's mistake and her overt acceptance of what the child said in fourth position (see line 07, *servi* 'it works'), as this position in the sequence would have been the mother's last place and resort to correct the child's troublesome turn (Schegloff 2000). It can also happen that the mother (as the recipient of a turn at talk) may find the child's prior turn in some way unacceptable. Faced with this interactional possibility, the recipient must determine whether and how they should address this problem (see, e.g. Tarplee 1996; Corrin 2010; Laakso 2010; Wells 2010; Wells & Stackhouse 2016). These repair practices underlie the mother and child's capacity to talk together, act together and, most importantly, understand each other (Schegloff et al 1977; Clark 1996;).

Extract 2 is an example of mother's repetition used to display unacceptability. Here, the mother's reparative repetition corrects the child's phonetically immature form. In this interaction, mother and child were making different objects and animals using dough cutters.

**Extract 2 (thacarfantasma 13:06-13:43)**

- 01-C: **vô ajudá a mamãe a faze 'bap'ãnə**  
*I'm going to help mommy to make a ghost*
- 02- (0,6)
- 03-M: 'fãn.t'asmə  
*Ghost*
- 04-C: 'β'a:p'qmə  
*Ghost*
- 05- (6,7)
- 06-C: vô cotá a fita  
*I'm going to cut the lace*

At first sight, the adult's turn (line 03, *fantasma* 'ghost') seems to be relatively unconstrained by the range of possible next utterances it projects. That is to say that *fantasma* 'ghost' (see line 03) seems not to restrict what may follow as a relevant next action for the child to take.

Although it is not a question that makes an answer relevant next turn, the mother's reparative repetition is an evaluation of the child's pronunciation (see section 4.1 for a full interactional and phonetic analysis). Crucially, we see that the child treats the mother's reparative repetition as an opportunity to do further work on her pronunciation (line 04, *βã*: 'p<sup>h</sup>a:ma 'ghost').

In other occasions, the mother may choose to use a reparative repetition to correct the child's lexical choice. In Extract 3 the mother and child are pretending to be in a restaurant. The child is acting as a 'waitress' and she is explaining to her 'client' (mother) the special dishes of the day. The 'dishes' are made out of play-dough and they are displayed on the table. The 'client' is expected to select one of the dishes displayed:

**Extract 3 (netneisabão 24:16-30:00)**

- 01-M: Como qui chama [essa (unclear)]  
*How is this one called?*
- 02-C: [é 'sapõn]  
*It is soap*
- 03-M: 'sabãw<sup>↑↓</sup>  
*soap*
- 04- (2.7)
- 05-M: ((laughs)) Eu naum comu 'sabãw (.) você come  
*I don't eat soap do you eat it?*

At first glance, the mother's repetition could have been another example of reparative repetitions to correct the child's pronunciation. Yet, the mother does a High-Fall reparative repetition (henceforth, RF reparative repetition) to initiate repair on the child's lexical choice (see line 2, *sapõn* 'soap'), as *sabão* 'soap' does not belong to the same semantic field as food. Further evidence that this turn is not designed to initiate work on the pronunciation of "soap" is provided by the next turns after the repetition. In line 5, it finally becomes clear that the mother's correction in line 3, as she does a post-other-initiation (Schegloff 2007) to explicitly correct the child's troublesome turn (*sapõn* 'soap').

In this article, I document the mothers' use of two practices available to initiate phonetic repair on their children's troublesome turn, syllable lengthening and rise-fall (RF) repetition. With these practices, mothers convey to their children (prior speakers) that what they've said/done is "wrong" and in need of correction. That is, they claim that the repeated utterance is incongruent with what they believe is correct or acceptable and initiate a repair sequence to address this problem (Schegloff et al. 1977; Schegloff 2000). Like many repair initiations, the mother's repetition locates the source of the recipient's trouble -- the repeated talk.

However, unlike more generic practices that focus on problems of hearing and understanding (see; Schegloff et al. 1977; Schegloff 2000; Svennevig 2008; Filipi 2009; Rossi 2015; Keel 2016), these repetitions strongly delimit the nature of the trouble, as the problem is not hearing or understanding it, but accepting it. Tarplee (1996, 2000), Wells (2010) and Wells & Stackhouse (2016) show that mothers initiate repair to correct their child's problem in pronunciation. However, they did not tackle the issue of other forms of repair initiation such as those that correct the child's lexical choice. When dealing with these kinds of mother's repetitions (repetitions to correct the child's pronunciation and lexical choice), mother and child need to negotiate the meaning of the action proposed by the mother's repetition. In this case, the mother's repetition is not only displaying a problem of acceptance but it is also displaying to the child the preferred next action.

This study refers to Clark's (1996) concept of interaction and joint action (see section 2) to analyse how mother and children negotiate the action done by the mother's reparative repetition. It aims to contribute to the growing group of studies done in languages other than English (see e.g. Svennevig 2008; Rossi 2015) by establishing a taxonomy of formats of other-initiated repair in mother-child interaction in Brazilian Portuguese.

## 2. Joint action in mother - child interaction

As we have seen in the introduction of this article, it is up to the mother (recipient of talk) to decide if she will disrupt the flow of the talk to correct something she considers unacceptable. When dealing with repetitions of the child's prior turn, mother and child need to establish a mutual understanding of what the mother meant when repeating the child's turn (Clark 1996; Svennevig 2004). This process entails that each participant displays to each other their perception (hearing) and interpretation (understanding) of each other's utterance, in other words, the participants' construal of it. This mutual understanding is essential when dealing with problems of acceptability, as the recipient and the speaker need to achieve mutual understanding of the action done by the mother's reparative repetition. Such a display of construal is manifested in the next turn and the understanding of these actions are imperative to maintain the talk's intersubjectivity. The turn-taking organization of the talk, in itself, is designed to facilitate this task, as every new contribution will be addressed to its prior turn (see section 3.2), and thereby will reveal something about the recipient's understanding of what it was just said (Schegloff & Sacks 1974; Heritage 1984; Svennevig 2004). This display of the recipient's construal provides the speaker with the opportunity to inspect how the recipient of the talk had understood what was said before (prior turn), and subsequently to validate it or to correct it in the third turn (Schegloff 1992; Clark 1996; Svennevig 2004).

Being able to understand the action done by the mother's reparative repetition requires a substantial level of understanding of what was said before (prior turn) but also a full understanding of what needs to come next (after the repetition).

In Extracts 1 and 2, we have seen examples where the children are able to understand the action done by the mothers' repetition. However, as shown in Extract 3, children sometimes might not be able to understand the action proposed by the mother's reparative repetition.

Extract 4 is another example of a mother's reparative repetition that is misinterpreted by child as doing a different action from the one proposed by her mother. In this example, mother and child are engaged in a picture labelling activity. In this example mother is testing the child's ability to label the colour of the crayons they are using to draw on the child's notebook.

### Extract 4 (thacarávore 27:03-27:16)

- 01-M: que cor é  
*what colour is it?*  
 02- (0,6)  
 03-C: é::  
 uhm::  
 04- (2,2)  
 05-M: **ver:**  
*first syllable of green*

- 06-C: **melho**  
last two syllables of red
- 07-M: **vermelhu**  
*red*
- 08- (1,1)
- 09-C: *é*  
it is
- 10- (1,5)

In the extract above, the mother tests the child's knowledge about the colour of the crayon the child is using to draw her picture by doing a known-answer question (Koole 2010). However, the child does not reply to the question posed by the mother (see line 02). Consequently, the mother hints the first syllable of the correct answer (see line 05, *ver*'first syllable of red') to help the child to come up with the answer. As the child says the other syllables to complete the word (*vermelho* 'red') it becomes evident to the mother and us (as analysts) that the child has said a different colour: *vermelho* (red) instead of *verde* (green). Thus, in response to the child's answer, the mother does a reparative repetition to correct the child's lexical choice (see line 07, *vermelhu* 'red'). However, the child displays an understanding of the mother's reparative repetition as an other-repair initiation to confirm what the child said in the prior turn (see line 09, "é") instead of a repetition to prompt lexical repair.

The problem of distinguishing the function of lexical repetition has been debated also in the literature. Sorjonen (1996), Schegloff (1997) and Svennevig (2004) contend that one of the problems recipients and speakers have to face when using lexical repetitions is to distinguish the action the speaker is doing when uttering a repetition (Sorjonen 1996; Schegloff 1997).

Their very multi-functionality makes it difficult to explain some of the ambiguities involved when analysing repetitions. In fact, the multi-functionality of the mother's repetition calls for an analytic division between different actions done by the mother's repetition, which may be seen as a practice, so that the same form may be used for different functions (Walker 2014).

If one takes into consideration the actions and phonetic cues of each repetition one might be able to distinguish better one repetition from the other. This distinction between actions and practice is used in this article to distinguish the mother's repetitions that initiate repair on the child's pronunciation (henceforth called form) from the ones that initiate repair on the child's lexical choice.

### 3. Methodology

This analysis follows the Conversation Analysis methodological approach, based on the importance of the next turn and sequential implicature, and the phonetic characteristics of the mothers' repetition. It aims to examine how six monolingual Brazilian Portuguese mothers and 6 toddlers negotiate the meaning of the action done by the mothers' reparative lexical repetition of their children's previous turn.

#### 3.1 Mother's reparative repetitions

As we have seen in section 1, breakdown in communication between child and mother interactions cannot pass unnoticed. Specifically if the mother and the child do not understand or accept what they are saying to each other, the possibilities of coordinating their actions will vanish. It is essential that both mother and child repair and resolve communicative problems efficiently and quickly, when they arise (Schegloff. et al. 1977; Clark 1996;).

A repair sequence consists of a trouble source followed by a repair initiation and a repair solution (Schegloff et al. 1977). The focus of this study will be this type of repair activity, launched by the mother's lexical repetition of the child's prior turn.

Early work on other-initiation repair in English has proposed two formats of repair initiation involving repetition (Schegloff et. al 1977:367–8):

1. Partial repeat of the trouble-source turn plus a question word;
2. Partial repeat of the trouble-source turn.

Further studies on English interactions have largely confirmed this distinction, with minor adjustments to include also 'full lexical repeats of the trouble-source' (Schegloff 1997a; Tarplee 1996; Curl 2004, 2005; Kitzinger 2013; Benjamin 2013), so that it has become an established taxonomy of formats for other-repetition to initiate repair in English. This study is built on the analysis of partial repeats (see Extracts 2 and 3) and full repeats (see Extracts 1, 4, 7 and 8) of the troublesome turn that are used to display a problem of acceptance.

The mother's reparative repetitions consist of recordings (audio and video) of one-hour playtime interactions between 6 normally developing children (mean age 2.5) and their mothers. The recordings were made by the researcher in the participants' own houses. Each mother and child interaction was produced during half-hour of playtime. In total, there were 3 meetings, the first one to assess the child's lexical knowledge and another two to collect the data. Each meeting lasted for half an hour resulting in one-hour of mother and child interaction. In these meetings, the participants played with: play-dough, toys, colouring books and picture books that were given by the researcher, as well as, the toddlers' own toys.

Both the repetitions to correct the child's form and lexical choice found in this study have the following properties:

- They are lexical repetitions of a coparticipant's talk (other-repetitions).
- They are positioned immediately after the turn constructional unit (TCU<sup>1</sup>) containing the repeated talk.<sup>2</sup>
- They should be done as only one TCU and Intonational Phrase

I systematically collected only the utterances that matched these criteria from my data set (some 350 recorded interactions between Brazilian Portuguese mother-child, totalling about 6 hours). In total, 25 instances, in which 12% are to initiate repair on the child's form and 88% to initiate repair on the child's lexical choice, are examples of lexical repetitions that initiate repair on the child's prior turn. In order to better understand the actions done by each mother's reparative repetition I will use the terminology of Conversation Analysis (henceforth CA) on "repair" (for recent reviews see Kitzinger 2013; Fox et al. 2013; Benjamin & Walker

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<sup>1</sup>Turn constructional units (TCUs) are building blocks out of which turns are fashioned. TCUs are prosodically, pragmatically and syntactically completed (Schegloff, 2007)

<sup>2</sup> I mean "immediately" not in the temporal sense but in the turn-sequential sense, as being the next unit of talk (see Benjamin & Walker, 2013; Schegloff, 2000)

2013 and Dingemanse et al. 2016) and some prosodic concepts found in interactional phonetics (see e.g. Couper-Kuhlen 1996; Local & Walker 2004; Curl 2004, 2005; Ogden & Walker 2013; Walker 2014; Wells & Stackhouse 2016). The functional/sequential and the phonetic analysis will be carried out in tandem, not one after the other.

The transcription conventions were based on Wilkinson & Beeke (2012) where some phonetic and prosodic symbols are used together with the already established Jeffersonian system as a tool to depict the actions done by the mother's repetitions to initiate repair for form from repetitions that are used to initiate repair on the child's lexical choice. Since the mother's reparative repetitions to correct pronunciation (form) and to correct the child's lexical choice are repair initiations, I will resort to CA terminology to distinguish one repair practice from the other.

### *3.2. The importance of the next turn in mother's repetitions to initiate repair on the child's prior turn*

Turns at talk are built to be understood as dependent upon one another. Each next turn will display to the recipient how the previous turn has been received and understood (Heritage 1984; Schegloff 2007). In this subsection, I discuss the analytic importance of the next turn in mother-child talk with special attention to the child's understanding of it. Next turn position has a special status in the analysis of the interpretation of the talk as it is used by mother to give feedback to the child's previous turn.

This study shows that children receive feedback on all their utterances, just as all of their mother's turns receive feedback on their utterances. The talk is collaborative constructed in a way that mother and child use the next turn to display to one another how the prior turn has been received and, most importantly, what was understood from it. In the case of the mother's repetitions, the next turn is used to make clear to the child and to the analysts, what the intended action done by the repetition was. Additionally, it is used to display how the child understood the mother's repetition.

### *3.3. Sequence implicature in corrections for form*

Contributions to an interaction are not randomly ordered with respect to one another: certain actions in talk make relevant other actions that follow them (Sacks 1993; Tarplee 2010). In this section, I discuss the analytic importance of sequential implicature in mother-child talk.

Going back to the concept of feedback in adult-child interaction (see 3.0), adult feedback to the child's prior turn is regarded only with respect to its retrospective stance (child's prior turn). However, the adult's turn in itself is a prior to the next action, which carries its own sequential implications and expectations on what to occur next. Therefore, by looking at the children's response to their mother's turn, one can begin to uncover the sequential implication of the mother's turn in itself and start to build a picture of what kind of information children are understanding from what their mothers say.

## *4. Analysis*

This section explains the interactional and phonetic differences between the mother's

repetitions to initiate repair for form and repair for lexical choice. Here, I will explain these differences by taking into consideration the importance of the next turn in correcting the child's pronunciation (repetitions to initiate repair on the child's form, see 4.1) and the child's lexical choice (repetitions to initiate repair on the child's lexical choice, see 4.2). I will also distinguish the differences in sequential implicature between mother's repetitions to initiate repair on the child's pronunciation from the ones used to initiate repair on the children's lexical choice. The differences in actions done by each mother's repetition and how mother and child negotiate their meaning will be the focus of this section. Finally, I will distinguish phonetically the mother's repetitions to initiate repair for form from the ones used to initiate repair for lexical choice.

#### 4.1. Mother's repetitions to correct the child's pronunciation

As mentioned, mothers may carry out a reparative repair to correct the child's prior turn pronunciation. Extract 5 (an extended version of Extract 3) provides an example of this kind of correction.

##### Extract 5 (thacarfantasma 13:06-13:43)

- 01-M: vô fazê di brancu  
*I'm going to make it white*
- 02- (1,9)
- 03-C: é  
*Yes*
- 04- (0,3)
- 05-C: vô ajudá a mamãe a faze 'bap<sup>h</sup>ãñə  
*I'm going to help mommy to make a ghost*
- 06- (0,6)
- 07-M: 'fãñ:t<sup>h</sup>asmə  
*Ghost*
- 08-C: 'β<sup>h</sup>ã:p<sup>h</sup>qmə  
*Ghost*
- 09- (6,7)
- 10-C: vô cotá a fita  
*I'm going to cut the lace*

Here, the mother's reparative repetition (line 07, 'fãñ:t<sup>h</sup>asmə 'ghost') is used to, at the same time, initiate repair and repair the child's prior troublesome turn (line 05, 'bap<sup>h</sup>ãñə 'ghost'). However, as discussed above, at first sight the mother's repetition (see line 07, 'fãñ:t<sup>h</sup>asmə 'ghost') might display a vast range of possibilities regarding the function and practice it may project. That is to say that *fantasma* 'ghost' (line 07) seems not to restrict what may follow as a relevant next action for the child to take, as it is not a question-answer sequence. This fact could cause an interactional problem. However, in this example both participants (especially the child) seem to display a clear understanding of the action done in the mother's prior turn (line 07, 'fãñ:t<sup>h</sup>asmə 'ghost'). Here the mother's repetition (line 07, 'fãñ:t<sup>h</sup>asmə 'ghost') prompts self-repair from the child. In another words, the mother's reparative repetition turn is used to take some time off from the conversation to deal with the

child's pronunciation problem before continuing with their interaction. The mother's repair initiation aims to pursue and establish a joint project (joint action), which will allow them (mother and child) to work together on the child's pronunciation problems. The establishment of a collaborative joint action between mother and child is made even more evident when the mother proposes a repair solution in her reparative repetition (see line 07, 'fān:t<sup>h</sup>asmə' 'ghost'). This reparative repetition and repair solution prompts the child's second trial at pronouncing the troublesome turn (see line 08, 'β<sup>h</sup>ā:p<sup>h</sup>amə' 'ghost'). The child's second trial is approved and accepted by mother as no further correction is pursued (see line 09) and a new topic of interaction is initiated.

In Extract 5, the most striking phonetic differences between the child's two utterances (the first one in line 05, 'bap<sup>h</sup>ānə' 'ghost' and the second one in line 08, 'β<sup>h</sup>ān:p<sup>h</sup>amə' 'ghost') is the first syllable of *fantasma* 'ghost'. In the child's second version, instead of a voiced bilabial plosive [b] followed by an open front vowel [a] the child produces a voiced bilabial fricative [β] followed by a nasal open front vowel [a] and a stressed alveolar nasal [n], which resembles much more the mother's first syllable ['fān] of the target turn (see line 07, 'fān:t<sup>h</sup>asmə' 'ghost'). Additionally, the child reproduces the first syllable lengthened to detach the troublesome syllable from the rest of the word as the mother did in her reparative repetition (see lines 07, 'fān:t<sup>h</sup>asmə' 'ghost' and 08 'β<sup>h</sup>ān:p<sup>h</sup>amə' 'ghost'). The second version also comes to line with the adult's on the last syllable of the word [mə], by having a voiced bilabial nasal [m] followed by a central close-mid vowel [ə] in place of a stressed alveolar nasal [n] followed by a central close-mid vowel [ə].

In terms of intonation, the mother produces the reparative repetition with a different pitch pattern and longer duration than the child's troublesome turn (see Figures 1 and 2).

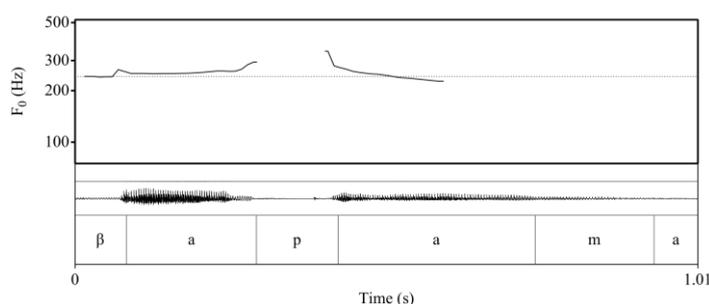


Figure 1: Pitch pattern of the child's troublesome turn.

The child, instead, relatively<sup>3</sup> matches the pitch pattern of her second version (repair solution) with the pitch pattern of the mother's repetition (see Figures 2 and 3). The mother's pitch rises 9 semitones (ST)<sup>4</sup> over the stressed syllable [fān]. A similar rise can be seen in the child's second version, where the pitch rises 4 semitones (ST) over the stressed syllable [β<sup>h</sup>ā].

Here the relative pitch matching is used to align with the action in progress, in agreement with Wells (2010) and Wells & Stackhouse (2016)'s findings for English children.

<sup>3</sup> Speakers can match their tones relatively when they use similar pitch levels but relative to their respective voice range (see Couper-Kuhlen 1996).

<sup>4</sup> Semitones (ST) provide a perceptually more appropriate representation of pitch than Hertz when dealing with conversation (see Couper-Kuhlen 1996; Nolan 2003): 12ST = 1 octave.

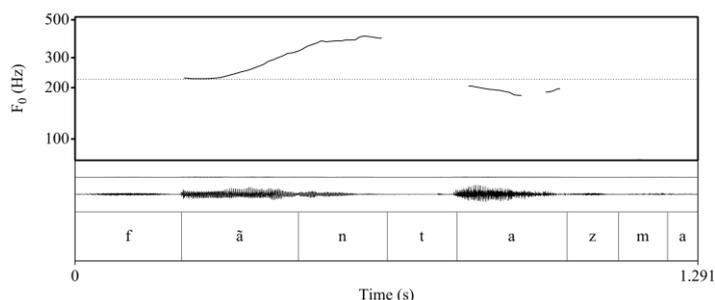


Figure 2: Pitch pattern of the mother's reparative repetition to correct the child's pronunciation.

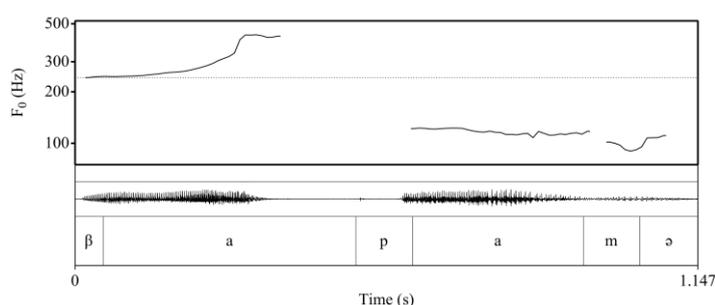


Figure 3: Child's repair solution matching the contour of the mother's reparative repetition.

As shown in this example, the repair solution (the child's second version) at segmental and intonational levels are accepted by the mother who opts not to pursue further correction in line 09 which entitles the beginning of a new action.

Extract 6 is another example of the mother's reparative repetitions used to correct the child's pronunciation. Here the mother and child are colouring together a colouring book from the *Backyardigans* (a TV series for children). At a certain point, the mother stops colouring and asks her daughter to label the characters printed on the book's page. In the interaction reported below (Extract 6), the child is trying to remember the name of a character she was asked to label.

#### Extract 6 (thacarbackyardigans 0:20-0:30)

- 01-M: i:ssu: (.) i essi  
*correct and this one*
- 02- (1,1)
- 03-C: ehm::: num sei  
*Uhm I don't know*
- 04-M: **u' aʷ**  
*the au (first syllable of Austin)*
- 05-C: **u:' a:w**  
*the au (first syllable of Austin)*
- 06- (0.6)
- 07-M: **'awstʃɪn**  
*Austin*
- 08-C: **'ãntʃ**

- Austin  
 09-M: 'awstʃɪn  
 Austin  
 10-C: 'ãwtʃɪ  
 Austin  
 11-M: Issu=  
 Right  
 12-M: =vamu vê u qui teim dentru  
 let's see what there is inside

Extract 6 above differs from the Extract 5 because the mother overtly models the correct pronunciation before the child makes an attempt. Here, the child claims not to know how to label the character the mother is pointing to. After the child has explicitly said that she does not know the character's name (see line 03, "ehm::: num sei"), mother hints the character's name by saying the first syllable of it (see line 04, [y'ãw], 'first syllable of Austin'). In the next turn (see line 05, [uʷ:'a:w], 'first syllable of Austin') the child produces the same vowels (close-back vowel [u] and a front-open vowel [a]) and semi-vowel (voiced labial-velar approximant [w]) as the mother prior turn.

Additionally, the child relatively matches the pitch pattern of her mother's prior turn (see lines 05 and 06). The mother's pitch rises 14 ST over the first syllable [y'ãw], 'first syllable of Austin'. A similar rise can be seen on the child's second version, where the pitch rises 11 semitones (ST) over the first syllable [u:'a:w], 'first syllable of Austin'. Here, by relatively matching her pitch pattern with her mother's prior turn pitch pattern, the child displays alignment with the action proposed by her mother (see Figures 4 and 5). The mother treats this alignment as a signal that the child had understood and joined the joint project (labelling the character) proposed by her known answer question (Koole 2010) at the beginning of the talk (see line 1, *i:ssu: (.) i essi*, 'correct and this one').

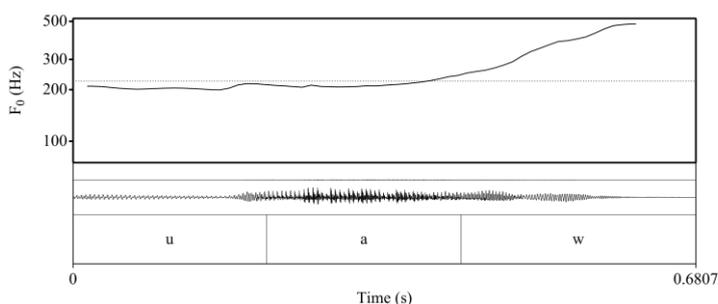


Figure 4: Mother's pitch pattern of the first syllable of Austin.

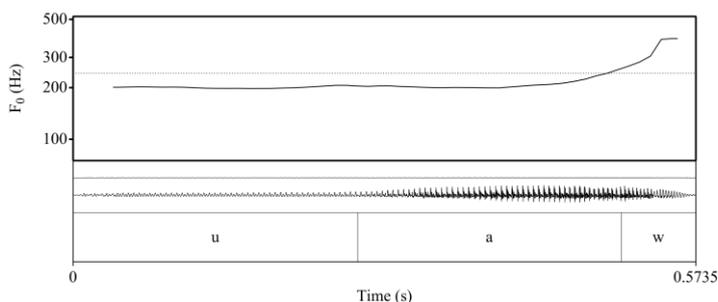


Figure 5: Child's relative pitch match with the mother's prior turn.

In fact, the child's repetition and prosodic alignment on the first syllable of the word could have been understood by the mother as a display of understanding and knowing the answer to line 1. Yet, as the child passed her turn (see line 06), mother opts to model the correct response (see line 07, 'awstfin 'Austin'). As in any learning interaction, the child's take this opportunity to practice the new word learned (see line 08, 'ãntf 'Austin'). However, the mother seems to perceive the child's attempt at saying the name of the character as a troublesome turn, since the child mispronounced it and failed to match the mother's prior turn (see Figures 6 and 7).

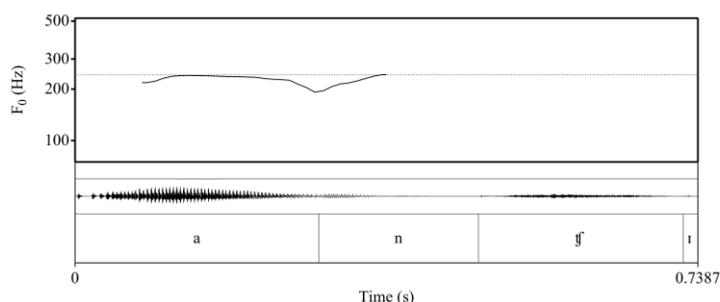


Figure 6: Child's troublesome turn.

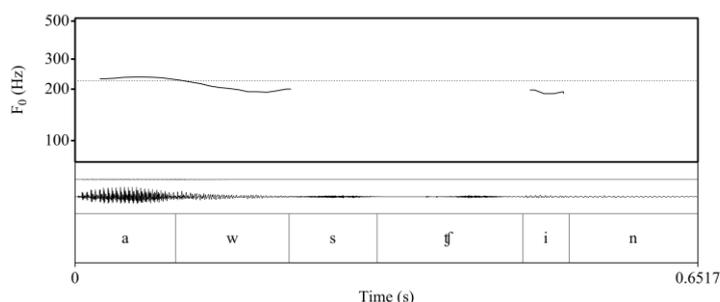


Figure 7: Mother's reparative repetition to correct the child's pronunciation.

The mother does a reparative repetition to correct the child's prior turn (see line 09, 'awstfin 'Austin'). The most salient phonetic differences between the child's two utterances is the first syllable of *Austin* (the first one in line 08, 'ãntf and the second one in line 10, 'ã<sup>w</sup>tʃi). In the child's second version, in place of nasalized open-front vowel [a] followed by a voiced alveolar nasal [n] the child produces a labialized open-front vowel [ã<sup>w</sup>], which resembles much more the mother's first syllable ['aws] of the target turn (see line 09, 'aws:tʃin, 'Austin'). Additionally, the child reproduces the first syllable with a lengthening, in order to detach the troublesome syllable from the rest of the word, as the mother did in her reparative repetition (see lines 09, 'aws:tʃin 'Austin' and 10 'ã<sup>w</sup>:tʃi 'Austin'). The second version also comes to line with the adult's on the introduction of a close-front vowel [i] after the palatalized voiceless alveolar plosive [tʃ].

In terms of intonation, the mother produces the reparative repetition with a different pitch pattern and longer duration than the child's troublesome turn (see Figures 6 and 7).

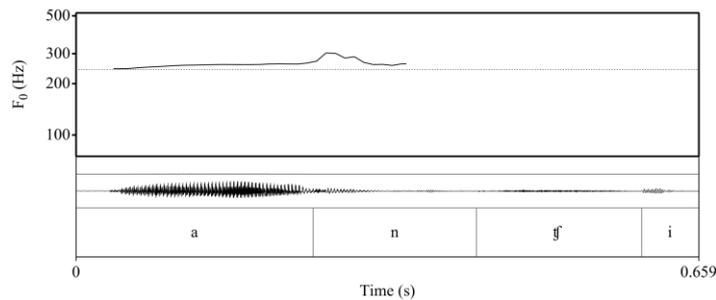


Figure 8: Pitch pattern of the child's repair solution (child's second version).

In the repair solution (child's second version) the child, different from the example above (see Extract 5), does not match the pitch pattern of her second version with the pitch pattern of the mother's repetition (see Figures 7 and 8). Yet, the mother accepts the child's answer as correct (see line 11, *issu* 'correct') and starts a new action. These results might suggest that the child being able to pronounce the word more similar to the adult form is more important than being able to match the mother's pitch pattern. Yet, more studies need to be done, with more participants, to confirm this trend.

In summary, the mother produces a reparative repetition with the first syllable lengthened and with different pitch patterns from the ones found at the child's troublesome turn to initiate repair on the children's pronunciation. In this case, intonation (pitch matching) is used just as an extra cue to help the children to display her alignment with the action proposed by their mother.

#### 4.2. Mother's repetitions in the correction the child's lexical choice

The mother's reparative repetitions can also be used to prompt the child to correct his/her lexical choice. In this study, the vast majority (88%) of the mother's repair initiations are done in order to correct the child's lexical choice. Extract 07 is an example of this kind of repair initiation.

#### Extract 7 (caenetamarelo 13:06-13:43)

- 01-M: Naum é u mickey=  
*It is not Mickey*
- 02-M: =I essa que cor que é essa  
*And this what colour is it*
- 04-C: **mã'ɛla**  
*yellow*
- 05-M: **ama'rɛ:lɔ**  
*yellow*
- 06- (0,9)
- 07-C: <<creaky>> é  
*yes*
- 08-M: Ah: num é amarela[ nada  
*Oh it is not yellow*
- 09-C: [laughs

10- (2,1)

Here the mother does a Rise-Fall (RF) pitch pattern (see line 05, *ama're:tə* 'yellow'), rising 11 ST over the lengthened stressed syllable and falling 11 ST to initiate repair on the child's prior turn (see figs. 9 and 10). As we see from the subsequent turn (see lines 6, 7 and 8), this utterance repeats the child's troublesome turn to initiate repair on the child's lexical choice.

The child, by providing a confirmation (see line 07, *é* 'sim'), can be said to treat the mother's repetition as a repair to confirm what the child said (see line 05, *ama're:tə* 'yellow'), but it is clear from the context and the following talk (see line 08, *Ah: num é amarela nada* 'Oh it is not yellow') that the mother's repetition was designed to correct the child's lexical choice. In fact, in line 08, mother does an explicit post-repair initiation (*Ah: num é amarela nada* 'Oh it is not yellow') to make clear to the child that her repetition did not aim to confirm the child's prior turn, but it aimed to prompt self-correction from the child. Here, the child was expected to say the correct colour, which is not *amarela* 'yellow' but *azul* 'blue'. Yet, the child fails to understand the action proposed by her mother's repetition, as she laughs on the next turn (line 09) to fill in her turn (see Walker, upcoming). In turn, 10 the mother chooses not to pursue further on correcting the child's lexical choice.

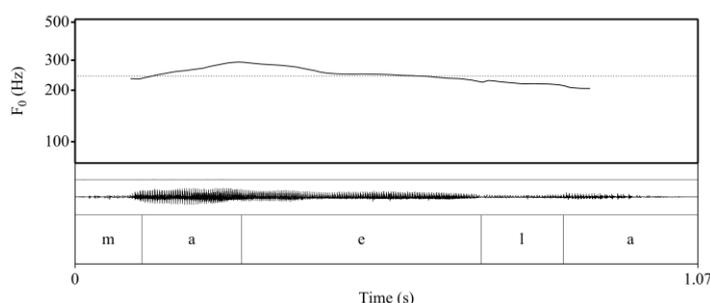


Figure 9: Child's wrong lexical choice (troublesome turn).

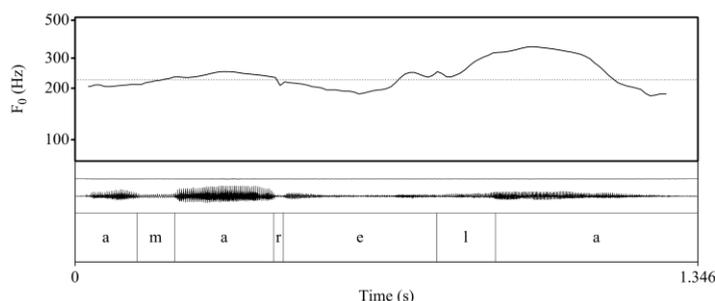


Figure 10: Mother's RF reparative repetition to correct the child's lexical choice (*amarelo*).

Another example of mother's repetition is extract 8. This extract happens after the mother had checked if the child knew how to name all the characters from *Backyardigans*. Here the child starts to count to start a new sequence of actions.

#### Extract 8 (thacarbackyardigans 0:20-0:30)

01-M: um do trê quatu cinco seis  
one two three four five six

02-M: seis

- six  
 03-C: Naum setʃ oto novi [i deis  
*No seven eight nine and ten*  
 04-M: [naum <<click>> vamo contá direitu ( ) um  
*no let's count it correctly one*  
 05-C: um [dois teis quatu cincu  
*one two three four five*  
 06-M: [dois teis quatu cincu (.) cê lembra u nomi deli  
*two three four five do you remember his name*  
 07-C: ehm::  
*uhm*  
 08-M: quem é essi  
*who is this one*

Similar to Extract 7, the child also fails to understand the action done by the mother's RF reparative repetition (line 02). Here, mother does a RF reparative repetition with a rise-fall pitch pattern, rising 9 ST and then falling 4 ST over the lengthened stressed syllable (see Figs. 11 and 12).

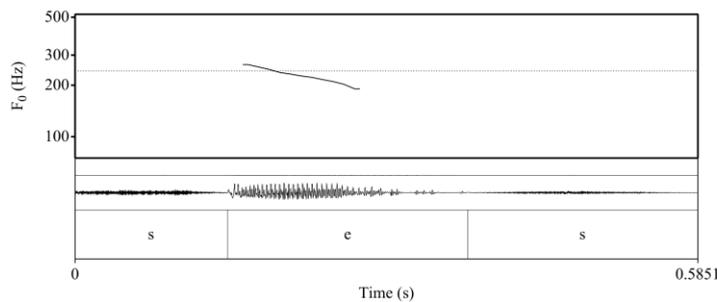


Figure 11: Child's troublesome turn (*seis*).

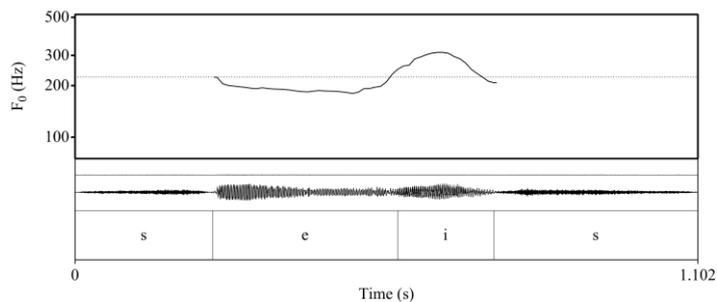


Figure 12: Mother's RF reparative repetition to correct the child's lexical choice (*seis*).

To initiate repair on the child's troublesome turn (see line 1, *um do trê quatu cincu seis* 'one two three four five six'). The RF reparative repetition selects the troublesome turn (six) to propose a joint project, in which the child is supposed to give the correct number of characters. Here the child's ability to count numbers is not considered a problem, as she clearly seems to know how to count properly (see line 3, *Naum, setʃ, oto, novi i deis* 'no seven eight nine and ten'). The problem here is that the child continues to count randomly (see line 3 *naum setsi, oto, novi i deis* 'no seven eight nine and ten') to guess the correct response as there are 5 characters and not 6 or 10 printed on the book.

Similar to Extract 07, the child seems to understand that the mother's turn was used to initiate repair, but in both examples the children fail to successfully complete the repair by giving an acceptable repair solution. In fact, in Extract 08 line 4, the mother does an explicit post-repair initiation to explicitly display disagreement with the final number of characters the child said there were. As the child does not seem to understand what the correct number of characters on the book's page was, mother carries out another TCU to prompt the child to count the characters again from the beginning (see line 4 *naum <<click>> vamo contá direitu (.) um* 'no <<click>> let's count it correctly'). On the next turn (line 6), mother overlaps with the child to help the child to come up with the correct answer. However, the child does not give the correct answer because she really knows the number of characters on the page. Instead, she just stops counting together with her mother. Therefore, assuming that the mother's final number is the correct response, the mother starts a new set of question-answer sequence on the same TCU (line 6 [*dois, três, quatro, cinco* (.) *cê lembra u nomi deli* 'two, three, four, five (.) do you remember his name?') to change the topic of interaction.

In summary, we have seen that, in order to attain and maintain intersubjectivity, mother and child need to establish a joint project in which the action projected by the mother's reparative repetition has the same meaning for both participants. A successful negotiation of the meaning of the action done by the mother's repetition will lead to a successful interaction, in which the mother will take some time off to deal with and solve some misunderstanding problems in the talk and then continue with the talk in course. However, sometimes the child fails to successfully complete repair sequence the with an acceptance repair solution to the mother's reparative repetition, and when this happen the mother might pursue further correction until she gives up and moves on to another topic of conversation. In RF reparative repetitions used to initiate repair on the child's lexical choice, for example, the child seems to misunderstand the purpose of the mother's repetition. Here, the child understands the mother's RF reparative repetition as a request for confirmation instead of a repair initiation to display problem in acceptance.

#### 4.3. Preference for correcting the child's lexical choice

In both kinds of repair-initiation (reparative repetitions to correct form and lexical choice), there is a clear preference for the children to self-correct their troublesome turn. This study aligns with studies in English interactions (Tarpsee 1996, 2010; Corrin 2010) by showing that, even though adult-child interactions are characterized by a hierarchal and pedagogical interaction among the participants, the preference for self-correction is still maintained regardless if the mother's reparative repetition is used to correct the child's pronunciation or lexical choice.

The mothers from this study seem to have preference to correct the children's lexical choice, as 88% of the reparative interactions analysed in this study are used to correct the child's lexical choice. This fact might be influenced by the age of the children, as they are already able to speak the language and convey what they want without major problems.

### 5 Discussion and conclusion

The phonetic characteristics of the mother's repetition are meant to help the child distinguish the different actions done by the mother's repetition. However, the child seems to understand

and join the mother's proposed joint action only in cases of reparative repetitions that are used to correct the children's pronunciation problems.

The children from this study seem to understand their mothers' RF reparative repetitions as requests for confirmation and not repair initiations to correct the child's lexical choice. This could be influenced by the fact that children only acquire a full understanding of the action done by a question when they are older than 4 (see Forrester 2013, 2015). It might be the case that the children involved in this study were not able to distinguish one form of question from another. Therefore, they seem to understand mother's reparative repetitions done to correct pronunciation first as compared to repetitions to correct lexical choice. Future study should investigate the milestones of this development.

These results aim to give a response to the poverty of stimulus theory by showing that parents and children are constantly giving feedback to each other, as each turn is used as a response and is related to its prior turn.

This study also aims to bring another light to the language acquisition discussion by showing that children receive feedback on all their utterances, just as all of the mother's turns receive feedback on their utterances. Turns at talk are built to be understood as dependent upon each another. Therefore, the children's success in correcting or not the mother's repetition will depend on their language development and on their ability to recognize if the practice applied by the mother is fitted or not and not on their ability or not to correct something.

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### *Transcription conventions*<sup>5</sup>

- [ overlap talk
- = an equals sign marks where there is no interval between adjacent utterances
- (0.6) silences are marked in seconds and tenths of seconds
- (.) a full stop in single brackets indicates an interval of tenth of a second or less in the stream of talk
- oh: a colon indicates an extension of the sound or syllable it follows (more colons prolong the stretch)
- , a comma indicates a continuing intonation
- ? a question mark indicates a rising inflection, *not necessarily a question*
- ↑↓ marked rising and falling shifts in intonation are indicated by upward and downward pointing arrows immediately *prior* to the rise or fall
- stress underlining indicates emphasis
- °no° degree signs indicate a passage of talk which is *quieter* than surrounding talk
- >talk< greater than signs indicate sections of an utterance delivered at a *greater speed* than the surrounding talk
- <talk> lesser than signs indicate sections of an utterance delivered at a *slower speed* than the surrounding talk
- (dog) single brackets containing either a word, phrase, or syllable count (if utterance is very unclear) mark where target item(s) is/are in doubt to the transcriber

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<sup>5</sup> Based on Wilkinson & Beeke (2012)

## Gerund imperatives

Richard Stockwell

I argue that prescriptive infinitives, as directed at children (Johannessen 2015), and generic imperatives, as encountered in public notices and instructions, have the same syntax. Both are infinitival, and both exhibit similar order and person restrictions. These restrictions result from lacking clausal structure above vP. Instead, prescriptive infinitives and generic imperatives are nominal, embedded under D. The division between such gerund imperatives and standard finite imperatives motivates a generative emergentist approach to Universal Grammar (Biberauer 2014).

### *1. Introduction*

This paper argues for a unified analysis of two types of infinitival imperatives – child-directed prescriptive infinitives (Johannessen 2015) and generic imperatives – as gerund imperatives. Swedish (a) is an example of a language where infinitival imperatives are common in child-directed speech; while Italian (b) is an example of a language where generic imperatives, as encountered on public notices and instructions, are infinitival. The typology in (1) will be expanded below.

- (1) Gerund imperatives
- (a) prescriptive infinitives (Swedish)
- Inte hälla mjölken  
not pour.INF milk.DEF  
'Don't pour the milk!' (Childes, ant23\_08.cha)
- (b) generic imperatives (Italian)
- Non disperdere nell' ambiente.  
not disperse.INF in-the environment  
'Don't discard in the environment.'

I show that prescriptive infinitives and generic imperatives exhibit similar syntactic restrictions on word order and person. I analyse these restrictions as resulting from a lack of clausal structure above vP. Instead, prescriptive infinitives and generic imperatives should be unified as nominal gerund imperatives, embedded under D (Abney 1987).

In outline, section 2 presents and extends Johannessen's (2015) survey of child-directed prescriptive infinitives in the Primary Linguistic Data (PLD) for Nordic languages. Johannessen observes that prescriptive infinitives are syntactically restricted in terms of word order and person as compared to finite imperatives. Section 3 introduces generic imperatives, which I argue to have the same structure as prescriptive infinitives. I advance this argument in section 4 based on infinitival imperatives in Italian. Italian generic imperatives exhibit ordering and person restrictions on clitics. These restrictions are not found in Italian direct negative imperatives, despite both having an infinitival syntax. Section 5 brings together the order and person restrictions on prescriptive infinitives and generic imperatives to argue that the two are unified by a lack of clausal structure above vP. I speculate in section 6 that prescriptive infinitives and generic imperatives should be unified as gerund imperatives. Section 7 summarises and concludes with how the division of the PLD into finite and gerund imperatives might bear on language acquisition, motivating a generative emergentist approach to Universal Grammar (Biberauer 2014).

## 2. Prescriptive infinitives

Johannessen (2015) observes that the Primary Linguistic Data (PLD) available to acquirers of Nordic languages (Danish, Faroese, Icelandic, Norwegian, Swedish) exhibit two forms of the imperative. Alongside 'finite imperatives', we find 'child-directed prescriptive infinitives'. While both have a command meaning, prescriptive infinitives are pragmatically restricted to intimate yet hierarchical settings from a parent to their child. There are striking syntactic differences between finite imperatives and prescriptive infinitives. These differences are exemplified in (2)-(5) and summarised in table 1 (data are directly from Johannessen (2015) unless otherwise indicated).

- (2) Order of verb and negation (Swedish)
- (a) finite imperative V – Neg  
 Kom inte hit med dig!  
 come.IMP not here with you  
 'Don't come here, you!' (Teleman et al. 1999:2777)
- (b) prescriptive infinitive Neg – V  
 Inte hälla mjölken  
 not pour.INF milk.DEF  
 'Don't pour the milk!' (Childes, ant23\_08.cha)
- (3) Order of verb and subject (Norwegian)
- (a) finite imperative V – Subj  
 Spør du meg ikkje  
 ask.IMP you me not  
 'Don't you ask me!' (Nordic Dialect Corpus)
- (b) prescriptive infinitive Subj – V  
 Nora sitte rolig der Nora  
 Nora sit.INF quietly there Nora  
 'Nora, sit quietly there, Nora' (Childes, nora2.cha)

- (4) Person of the subject (Norwegian)
- (a) finite imperative 2<sup>nd</sup> person  
 Ikke tegn deg selv!  
 not draw.IMP you.2 self  
 ‘Don’t draw yourself!’
- (b) prescriptive infinitive 3<sup>rd</sup> person  
 Ikke tegne seg selv!  
 not draw.INF her/him.3 self  
 ‘Don’t draw yourself (lit. oneself)!’
- (5) Person of the object (with respect to the speaker) (Norwegian)
- (a) finite imperative 1<sup>st</sup> person  
 Suss meg!  
 kiss.IMP me.1SG.ACC  
 ‘Kiss me!’
- (b) prescriptive infinitive 3<sup>rd</sup> person  
 Susse mamma!  
 kiss.INF mummy.3  
 ‘Kiss mummy!’

	Order of verb and negation	Order of verb and subject	Person of the subject	Person of the object
<b>Finite imperative</b>	V – Neg	V – Subj	2	1
<b>Prescriptive infinitive</b>	Neg – V	Subj – V	3	3

Table 1: Syntactic differences between finite imperatives and prescriptive infinitives

From the data in (2)-(5), summarised in table 1, we see that Nordic prescriptive infinitives are syntactically restricted compared to finite imperatives. The infinitive is unable to move over negation or the subject, and only third person is possible.

The division of the PLD into finite imperatives and prescriptive infinitives extends beyond the Nordic survey presented by Johannessen (2015). Beyond Nordic, Mills (1985:153,160) reports infinitival imperatives in German (6) as part of “syntactic baby talk”, noting that they are particularly common as negative commands (6bii). And beyond Indo-European, Berman (1985:288) observes infinitival imperatives in child input and production in Modern Hebrew (7), using the general negator *lo*’ plus the infinitive (7b), as opposed to the special negator *al* plus a future verb form (7a).



- (10) Per favore non calpestare il prato. (Italian)  
 for favour not tread.INF the lawn  
 ‘Please don’t walk on the grass.’ (Sign on the lawn of King’s College, Cambridge)

Like prescriptive infinitives, generic imperatives exhibit an infinitival syntax. I argue that both are characterised by a radically reduced structure, lacking clausal projections above vP. The next section advances this argument based on infinitival imperatives in Italian. We will see that Italian generic imperatives exhibit the same syntactic restrictions on order and person as Nordic prescriptive infinitives.

#### 4. Italian infinitival imperatives

Italian has two types of infinitival imperatives. In addition to generic imperatives (10), direct negative imperatives<sup>2</sup> (11) are also infinitival.

- (11) Direct negative imperative (Italian)  
 Non calpestare il prato!  
 not tread.INF the lawn  
 ‘Don’t walk on the grass!’

Despite sharing an infinitival appearance, generic imperatives and direct negative imperatives differ in their syntax. Descriptively, generic imperatives exhibit clitic placement and person restrictions that direct negative imperatives do not. These restrictions closely match the word order and person restrictions on prescriptive infinitives. This finding will lead to the conclusion that generic imperatives and prescriptive infinitives share a radically reduced clausal syntax.

##### 4.1. Clitic order in Italian infinitival imperatives

In Italian infinitival imperatives, clitics are restricted to following the infinitive in generic imperatives, while there is no such restriction in direct negative imperatives.

In Italian direct negative imperatives (12), clitics may follow (a) or precede (b) the infinitive. In fact, direct negative imperatives are the only structure in Italian where clitics can precede the infinitive (13) (examples from (Kayne 1992:300)).

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<sup>2</sup> While direct negative imperatives are infinitival, standard positive imperatives (i) are not. Compare the division of the Nordic data into finite and infinitival imperatives.

(i) Calpesta il prato!  
 tread.IMP the lawn  
 ‘Walk on the grass!’

- (12) Clitic order in direct negative imperatives (Italian)
- (a) following infinitive  
 Non far-lo!  
 not do.INF-it  
 ‘Don’t do it!’
- (b) preceding infinitive  
 Non lo fare!  
 not it do.INF  
 ‘Don’t do it!’
- (13) Clitic order elsewhere (Italian)
- (a) following infinitive  
 Gianni ha deciso di far-lo.  
 John has decided of do.INF-it  
 ‘John (has) decided of do it.’
- (b) not preceding infinitive  
 \*Gianni ha deciso di lo fare.  
 John has decided of it do.INF

Kayne (1992) analyses (12b) as a hidden instance of clitic climbing. In standard clitic climbing (14), a clitic optionally climbs from its base position as sister to an infinitive verb (a) to a higher finite verb (b). Kayne extends the clitic climbing analysis to direct negative imperatives by positing a null modal auxiliary, to which the clitic optionally climbs. The null modal auxiliary is licensed by the negator *non*, and is positioned between it and the verb, as shown in (15).

- (14) Standard clitic climbing (Italian)
- (a) base position  
 Gianni vuole comprar=lo  
 John wants buy.INF=it  
 ‘John wants to buy it.’
- (b) climbed to matrix verb  
 Gianni lo=vuole comprare  
 John it=wants buy.INF  
 ‘John wants to buy it.’

- (15) Kayne’s (1992) clitic climbing analysis of analysis of direct negative imperatives  
 Non lo-AUX fare

Kayne draws circumstantial support for his extension of clitic climbing to direct negative imperatives by noting that the orderings of (12) and (14) show the same regional preferences: the infinitive – clitic order (a) is favoured in the north; the opposite clitic – infinitive order (b) in the centre and south. Further support comes from the prohibition of a conjunction of actions (16), where a single negation *non* licenses just one null modal auxiliary. This single auxiliary provides structural support for only the first clitic to raise (a), not both (b).

- (16) One *non*, one AUX, one raised clitic (Italian)  
 (a) Non lo prendere adesso e riportarme-lo tra tre giorni!  
       not it take.INF now and return.INF-it within three days  
       ‘Don’t [take it now and return it to me in three days]’ (Kayne 1992:301)  
 (b) \*Non lo prendere adesso e me lo riportare tra tre giorni!

Strikingly, Kayne notes that his posited null modal auxiliary seems to be overtly realised as *sta* in Paduan (17).<sup>3</sup> Again, a single negator *no* licenses a single overt auxiliary in a conjunction of prohibitions (18), as in Italian (16). Beyond Kayne’s data, the modal auxiliary can also be overt in Panamanian Spanish (19) and English double verb imperatives (20).

- (17) AUX = *sta* (Paduan)  
       No sta parlare!  
       NEG AUX speak.INF  
       ‘Shut up!’ (Kayne 1992:305)
- (18) One *no*, one *sta* (Paduan)  
       No sta prenderlo uncò e (\*sta) riportar-me-lo doman!  
       NEG AUX take.INF-it today and (\*AUX) return.INF-me-it tomorrow  
       ‘Don’t [take it today and return it to me tomorrow]’ (Kayne 1992:305)
- (19) AUX = *-ve* (Panamanian Spanish)  
       ¡oye-ve!  
       hear-go  
       ‘Hear!’ (Alcázar & Saltarelli 2014:145f.)
- (20) AUX = *go* (English)  
       Go book it! (Alcázar & Saltarelli 2014:145f.)

In sum, clitics may follow or precede the infinitive in direct negative imperatives in Italian. Adopting Kayne’s analysis, the structure of Italian direct negative imperatives includes a null modal auxiliary. Clitics may remain in their base position following the infinitive, or precede the infinitive by climbing to the null modal auxiliary.

By contrast, the position of clitics is restricted to following the infinitive in generic imperatives. This contrast with direct negative imperatives is illustrated in (21).

<sup>3</sup> Cf. *scé* in Tarantino (Portner and Zanuttini 2003)

- (21) Clitic order in infinitival imperatives (Italian)
- (a) direct negative imperative: clitic may precede (i) or follow (ii) the infinitive<sup>4</sup>
- (i) Non ti alzare!  
not 2SG.REFL get.up.INF  
'Don't you get up!'
- (ii) Non alzarti!  
not get.up.INF.2SG.REFL
- (b) generic imperative: clitic cannot precede (i), but must follow (ii), the infinitive
- (i) \*Non si mettere nella corsia di sinistra.  
not 3SG.REFL place.INF in-the lane of left
- (ii) Non mettersi nella corsia di sinistra.  
not place.INF.3SG.REFL in-the lane of left  
'Don't drive on the left!'

In terms of Kayne's analysis, it seems that clitics cannot climb in generic imperatives. Our first thought might be to ascribe this restriction to the general fact that negation blocks clitic climbing in Italian (Zanuttini 1996:186; 1997), as demonstrated in (22).

- (22) Negation blocks clitic climbing (Italian)
- (a) Devo non parlarti.  
must NEG talk.to.you  
'I must not talk to you.'
- (b) ??Ti<sub>i</sub> devo non parlare e<sub>i</sub>.  
To.you must NEG talk  
'I must not talk to you.'

However, on Kayne's analysis (23), the null modal auxiliary to which the clitic climbs in direct negative imperatives is below the licensing negation, as in (21ai). Thus negation would not intervene, and so cannot be what prevents clitics from climbing in negative generic imperatives, as in (21bii).

- (23) Kayne (1992): Neg – AUX – V  
Non ti-AUX alzare

Moreover, in the absence of negation, clitics must follow the infinitive in positive generic imperatives (24).

<sup>4</sup> We saw the same ordering options with object clitics in (12) above. We see it here with subject clitics.

- (24) Positive generic imperative (Italian)
- (a) clitic cannot precede the infinitive...
- |          |           |        |        |    |         |
|----------|-----------|--------|--------|----|---------|
| *Si      | mettere   | nella  | corsia | di | destra. |
| 3SG.REFL | place.INF | in.the | lane   | of | right   |
- (b) ... but must follow it
- |                    |        |        |    |         |
|--------------------|--------|--------|----|---------|
| Mettersi           | nella  | corsia | di | destra. |
| place.INF.3SG.REFL | in.the | lane   | of | right   |
- ‘Drive on the right.’

In sum, clitics are restricted to following the infinitive in generic imperatives. This restriction on generic imperatives is not due to negation, and contrasts with the freedom for the clitic to follow or precede the infinitive in direct negative imperatives. This contrast suggests that, despite sharing an infinitival syntax, generic imperatives and direct negative imperatives are structurally different. In particular, we conclude that generic imperatives lack the null modal auxiliary (Kayne 1992) present in direct negative imperatives.

The next subsection adds to this argument by showing that, in addition to the ordering restriction, clitics in generic imperatives also exhibit a person restriction, which direct negative imperatives do not.

#### 4.2. Person in Italian infinitival imperatives

The previous subsection established that while clitics may freely follow or precede the infinitive in direct negative imperatives in Italian, their position is restricted to following the infinitive in generic imperatives. This subsection considers a second way in which generic imperatives are restricted where direct negative imperatives are not. Only third person clitics are possible in generic imperatives; whereas no such restriction obtains in direct negative imperatives.

This contrast between the possibility for first and second person in direct negative imperatives (a) and the restriction to third person in generic imperatives (b) is exemplified for subject clitics in (25), and object clitics in (26).

- (25) Person of the subject (Italian)
- (a) direct negative imperative 2<sup>nd</sup> person
- |     |                     |
|-----|---------------------|
| Non | alzarti!            |
| not | get.up.INF.2SG.REFL |
- ‘Don’t you get up!’
- (b) generic imperative 3<sup>rd</sup> person
- |                       |        |        |    |         |
|-----------------------|--------|--------|----|---------|
| Mettersi/*ti          | nella  | corsia | di | destra. |
| place.INF.3/*2SG.REFL | in.the | lane   | of | right   |
- ‘Drive on the right.’ (Maiden & Robustelli 2000:248)

- (26) Person of the object (with respect to the speaker) (Italian)
- (a) direct negative imperative 1<sup>st</sup> person  
 Non svegliarmi!  
 not wake.INF.1SG.REFL  
 ‘Don’t wake me up!’
- (b) generic imperative 3<sup>rd</sup> person  
 Svegliare i figli alle otto.  
 wake.INF the children at.the eight  
 ‘Wake your children up at eight.’

In sum, clitics are restricted to third person in generic imperatives. This restriction in generic imperatives contrasts with the freedom for the clitic to be first or second person in direct negative imperatives. As with the placement restriction in the previous subsection, this contrast suggests that generic imperatives and direct negative imperatives are structurally different, despite sharing an infinitival syntax. In particular, we conclude that generic imperatives lack person agreement projections.

The next section brings together our conclusions on clitic placement and person restrictions in Italian generic imperatives (this section) with our conclusions on word order and person restrictions in prescriptive infinitives (section 2). Overall, we will see that prescriptive infinitives and generic imperatives are alike in lacking clausal projections above vP.

### 5. Generic imperatives = prescriptive infinitives

This section reviews clitic placement and person restrictions on Italian generic imperatives in light of the similar restrictions on Johannessen’s (2015) prescriptive infinitives introduced in section 2. We will reach the conclusion that prescriptive infinitives and generic imperatives lack clausal projections above vP.

Consider first ordering restrictions. We saw in section 4.1 that clitics must follow the infinitive in Italian generic imperatives. This mirrors the word order facts for prescriptive infinitives. We saw in section 2 that in prescriptive infinitives the verb must follow negation and subjects. The relevant part of table 1 is repeated here as table 2.

	<b>Order of verb and negation</b>	<b>Order of verb and subject</b>
<b>Finite imperative</b>	V – Neg	V – Subj
<b>Prescriptive infinitive</b>	Neg – V	Subj – V

Table 2: Word order differences between finite imperatives and prescriptive infinitives

Johannessen (2015) seeks to capture the word order facts in table 2 by proposing that prescriptive infinitives lack T, whereas finite imperatives have T. The lack of T in prescriptive infinitives is argued to derive the preverbal negation and preverbal subject orders, since there is no position for the verb to raise into over negation or a vP-internal subject. For this argument to go through, Johannessen must intend that there are also no other clausal

projections besides T for the verb to raise into. Similarly, on our analysis of infinitival imperatives in Italian, the clitic placement restriction on generic imperatives results from their lack of a null modal auxiliary, which direct negative imperatives have. Unifying prescriptive infinitives and generic imperatives, then, both lack tense/modal clausal projections.

Turning now to person, we saw in section 4.2 that clitics may only be third person in Italian generic imperatives. This mirrors the person facts for prescriptive infinitives. We saw in section 2 that subjects and objects in prescriptive infinitives can only be third person. The relevant part of table 1 is repeated here as table 3.

	<b>Person of the subject</b>	<b>Person of the object</b>
<b>Finite imperative</b>	2	1
<b>Prescriptive infinitive</b>	3	3

*Table 3: Person differences between finite imperatives and prescriptive infinitives*

As with the word order facts, Johannessen (2015) seeks to capture the person facts in table 3 with her proposal that prescriptive infinitives lack T, whereas finite imperatives have T. Assuming T to be the locus of person features, third person results from the absence of T, reflecting default valuation, or the absence of person altogether. Similarly, on our analysis of infinitival imperatives in Italian, the clitic person restriction on generic imperatives results from their lack of person agreement projections, which direct negative imperatives have. Unifying prescriptive infinitives and generic imperatives, then, both lack person agreement projections.

We can now bring together our conclusions from the order and person restrictions on prescriptive infinitives and generic imperatives: both lack tense/modal/person projections.

How far does this lack of clausal projections extend? In particular, do prescriptive infinitives and generic imperatives have CP projections? Johannessen (2015) claims that prescriptive infinitives have CP. However, closer consideration of the order and person facts suggest that prescriptive infinitives and generic imperatives do not have CP. Regarding the order facts, a C would make available a position for movement. We might then expect verbs to raise to C over negation and subjects in prescriptive infinitives, and clitics to raise to C in generic imperatives; but we do not observe such movements. Regarding the person facts, if person features are derivative of speech-act participant structure in the C domain, a C should license first and second person features based on the speaker and addressee discourse participants; but first and second person are not licensed in prescriptive infinitives or generic imperatives. These considerations lead us to reject Johannessen's (2015) claim that prescriptive infinitives have CP. Rather both prescriptive infinitives and generic imperatives lack CP.

This conclusion begs the question of how prescriptive infinitives and generic imperatives receive their command meaning. On the standard analysis, clauses are typed as imperative in the C domain (van der Wurff 2007), specifically by Force, the highest projection in the left periphery (Rizzi 1997). How do prescriptive infinitives and generic imperatives come to carry imperative force, if they lack the relevant clausal projection?

I claim that the command meaning of prescriptive infinitives and generic imperatives is formally underspecified, and is instead determined pragmatically. Both are highly

contextually restricted, with the command meaning following automatically from their context of use. The command meaning of prescriptive infinitives follows from the intimate yet hierarchical setting of parent-child interaction. Similarly, the command meaning of generic imperatives follows from being within range of the instruction: if you can hear or see a generic imperative, then it is aimed at you.

In sum, the order and person restrictions on prescriptive infinitives and generic imperatives have led us to the conclusion that they lack tense, modal, and person agreement projections, as well as CP; that is, prescriptive infinitives and generic imperatives lack clausal projections above vP.

The next section speculates that prescriptive infinitives and generic imperatives may be nominal above vP.

### 6. Gerund imperatives

Based on order and person restrictions, this paper has argued that prescriptive infinitives and generic imperatives should be unified in structural terms as lacking clausal projections above vP. This section speculates that prescriptive infinitives and generic imperatives should be further unified as gerund imperatives.

On this view, prescriptive infinitives and generic imperatives have the structure in (27). They are clausal up to vP, with an arbitrary PRO subject, and then embedded under a D head (Abney 1987).<sup>5</sup> Semantically, the nominal nature of gerund imperatives reflects their status as abstract objects, generic laws on appropriate behaviour deriving from an unquestionable authority – one’s parents or the author of a public notice or instructions. Syntactically, D acts as the licensing head, in the absence of clausal C.

- (27) The structure of gerund imperatives  
[<sub>DP</sub> D [<sub>vP</sub> PRO<sub>arb</sub> [<sub>VP</sub> V DP ]]]

Evidence for this idea comes from English (28), where negative generic imperatives exhibit the negative determiner *no* rather than clausal *not*, and the gerund inflection *-ing*.

- (28) Negative generic imperatives (English)  
(a) No walking on the grass!  
(b) No eating in the lecture rooms!

<sup>5</sup> My use of the term gerund is restricted to the structure given in (27); that is, there is no further clausal structure between v and D. Languages vary considerably in how much clausal functional structure can be embedded below D. A reviewer offers (i) from Greek.

(i) Me eknevrizei [<sub>DP</sub> to [<sub>CP</sub> oti vrechei]].  
me unnerves the that rain.3SG  
'It unnerves me that it is raining.'

That such structures involve a full CP projection is confirmed by the possibility of wh-extraction (ii):

(ii) [<sub>CP</sub> pion<sub>i</sub> [<sub>IP</sub> akuses [<sub>DP</sub> ti fimi [<sub>CP</sub> t<sub>i</sub> oti [<sub>IP</sub> apelisan t<sub>i</sub> ]]]]]  
whom heard.2SG the rumour that dismissed.3PL  
'Whom did you hear the rumour that they dismissed?' (Horrocks & Stavrou 1987:83)

For a fuller typology of the amount of clausal structure permitted under D, see Borsley & Kornfilt (2000).

Negative generic imperatives are also overtly nominal in Korean (29) and Welsh (30), where they are expressed as embedded nominalised infinitivals.

- (29) canti-ey tul-e ka-ci ma-l kes (Korean)  
 lawn-to enter-INF go-NOMZ stop-PRS fact  
 ‘Keep off the grass’ (Sohn 1994:350)

- (30) Paid (â) mynd yn rhy bell! (Welsh)  
 stop.IMP.2SG (with) going in too far  
 ‘Don’t go too far!’

Finally, gerund imperatives may offer insight into the (rare) possibility of embedding imperatives. This rarity is often attributed to the restriction of imperative force to matrix C (van der Wurff 2007). But since gerund imperatives lack C, embedding is predicted to be possible, as in Korean (31).

- (31) Yeki tto o-la ko hay-yo (Korean)  
 here again come-IMP(neutral) QT say-POL  
 ‘(They) tell me to come back here again.’ (Sohn 1999:272; cf. Zanuttini, Pak & Portner 2012:1268)

In sum, prescriptive infinitives and generic imperatives can be speculatively unified as gerund imperatives, clausal up to vP, then embedded under D.

## 7. Conclusion

To summarise, this paper has argued that child-directed prescriptive infinitives (Johannessen 2015) and generic imperatives, as encountered in public notices and instructions, have the same syntax. Both are infinitival, and both exhibit similar order and person restrictions. Regarding order, Nordic prescriptive infinitives do not allow the verb to raise, just as Italian generic imperatives do not allow clitics to climb. And regarding person, only third person is possible in both prescriptive infinitives and generic imperatives. These restrictions result from the lack of structure above vP, which means there are no clausal positions for the verb or clitics to move to, nor to license first and second person features. Instead, prescriptive infinitives and generic imperatives were speculatively analysed as gerund imperatives, embedded under D.

I conclude with comments on how the division of the PLD into clausal finite imperatives and nominal gerund imperatives might bear on language acquisition and Universal Grammar (UG). In acquisition, this division may play a role in highlighting the verbal/nominal divide in functional structure. Thus the verbal/nominal divide in relatively common imperatives could underlie the grammaticality of vanishingly rare gerund structures, such as (32).

- (32) His dating her will end in tears.

The division into finite and gerund imperatives also has implications for the theory of UG. The PLD for imperatives are richer than communicative function might predict: one communicative function – command – has two syntactic realisations – one finite and clausal, the other gerund and nominal. This and other case studies (Biberauer, e.g. 2015) motivate a rebalancing among Chomsky’s (2005) three factors of language design. While still guided by their genetic endowment, UG (factor one), acquirers can gain much from exploiting the richness of the PLD (factor two) using domain-general principles of data analysis (factor three), such as making maximal use of minimal means (Biberauer and Roberts 2014). With factors two and three taking a greater explanatory load, UG can be reduced to an evolutionarily plausible small size, perhaps consisting of little more than Merge, Agree, and a formal feature template (Biberauer 2014). This generative emergentist approach – *pace* O’Grady (2005), Tomasello (2003) – is applied to imperatives more broadly in Stockwell (2015).

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### *Abbreviations*

ACC = accusative	POL = politeness marker
AUX = (null) modal auxiliary	PREP = prepositional case
C = complementizer head	PRS = prospective
CP = complementizer phrase	QT = quotative particle
D = determiner head	REFL = reflexive
DP = determiner phrase	SG = singular
DEF = definite	T = tense head
FUT = future	UG = Universal Grammar
IMP = imperative	V = verb head
INF = infinitive	VP = verb phrase
NEG = negator	vP = ‘little v’ phrase
NOMZ = nominalizer	1 = first person
PFV = perfective aspect	2 = second person
PL = plural	3 = third person
PLD = Primary Linguistic Data	

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# Examining the linguistic landscape of Alicante (Spain): sociolinguistic and lexical considerations

Amanda Roig-Marín

The on-going expansion of English all around the world seems an unquestionable reality. In Spain its influence can be mainly attested by the large number of Anglicisms existing in Spanish, as well as by its role in the country's "linguistic landscape", that is, the actualisation of underlying sociolinguistic realities through a number of elements such as commercial shop signs, street names and public signs. In this paper I explore the prevailing social attitudes towards English by analysing the idiosyncratic role and functions of this language as used in commercial shop signs present in the city of Alicante, Spain.

## 1. Introduction

In Spain, a multilingual country where, according to the Eurobarometer survey commissioned by the European Commission (2012:16), 54% of the respondents consider themselves unable to speak any foreign language, the role of English may appear not to be as paramount as in other geographical areas. Nevertheless, this figure may be misleading concerning the presence of English in Spain. Its influence can be attested by the following factors: (1) its preeminent position as the most demanded foreign language studied in educational settings, (2) its pervasiveness through the ample number of Anglicisms existing in the Spanish language, and (3) its role in the country's linguistic landscape (henceforth, LL), that is to say, the linguistic actualisation of the underlying sociocultural realities in multilingual contexts.

The emerging research field of LL (e.g., *inter alia*, Barni & Extra 2008; Edelman 2009) is concerned with the documentation and measurement of the presence of multiple languages in linguistically clashing or coexisting environments through several markers in the public sphere, such as street signage or shop signs. Some authors (Griffin 2004; Luján-García 2010; Jingjing 2013; MacGregor 2003; McArthur 2000; Schlick 2003) have approached the topic broadly, and their works evidence the presence of the global language in such distant regions as Beijing, Rome, Tokyo, and Las Palmas de Gran Canarias and its impact in quantitative and qualitative terms. This study bears resemblance to the aforementioned studies in so far as all these cities do not count with autochthonous English speakers — in other words, their inhabitants study English as a foreign language — and they are touristic, cosmopolitan areas to a greater or lesser extent. Yet the present analysis differs from its predecessors in its more stringent linguistic nature. The emphasis is not placed on measuring the impact of English on the

linguistic landscape of the city but on characterising the idiosyncratic uses of the languages used in shop names.

Following Crystal's (2003) classification of the status of a global language in a particular area, all the aforementioned cities should be grouped into the second group, characterised by not having English as an official language and having to learn a particular variety from an English-speaking country. Nevertheless, the choice of the 'English' to be taught in educational settings is not a resolved question.

Although in Europe the traditional variety studied is British English, international mobility and the powerful cultural productions coming from America, among other factors, seem to have changed this situation: learners — rather than institutions — seem to be empowered to decide which variety they want to follow. This reality materialises in the linguistic landscape of the city: an alternation between British and American spelling can occur on shop signs within the same city (Luján-García 2010).

Moreover, it is worth mentioning that the status of English as a foreign language also raises a phenomenon called "impersonal multilingualism" (Haarmann 1986). Haarmann (1986) suggests that the use of a foreign language — especially English — in Japanese media does not correspond to the real, everyday use of those languages in what is a mainly monolingual community. To put it differently, English usage is not a means of communicating a message, but it "serve[s] to stimulate the reader's feelings and to create a pleasant mood of 'cosmopolitanism'" (Haarmann 1986:110). This emotional function of English has also been identified in the data studied, which is why the communicative purpose of shop names is herein contested, particularly in Section 4.6., entitled "English as a sign of prestige".

In the current aggressive market, there is a growing attempt to internationalise shops, independently of whether they are large companies or small businesses. In order to do so, shop owners may give their businesses attractive but meaningless names in English. Their objective with this strategy is twofold: on the one hand, to become more competitive by drawing the pedestrian's attention to their shop signs, and on the other hand, and more importantly, to gain foreign customers, who — following the shop owners' rationale — are more willing to spend their money while they are on holiday or on business trips. If successfully implemented, these two aspects may contribute to a slow but steady expansion of a business locally or internationally.

## 2. Objectives and context

The present analysis attempts to give insights into the social attitudes towards English in the residential neighbourhood of "Playa de San Juan" ('San Juan Beach'), Alicante (Spain), through its presence on shop signs. The use and expansion of English in this touristic coastal region along the southeast coast of Spain can be partly explained by a desire to sell more products in a constantly expanding area and to keep up with "modern times", characterised by the adoption of English as a *lingua franca*.

In the data examined, there is a systematic appropriation and copying of the surrounding shop names, which has led to an endemic dissemination of specific merchandise-related vocabulary and recurrent mistakes at different linguistic levels. All this is problematised and discussed in the following sections. I also explore the following issues: whether the most salient language in the linguistic landscape is English or not, the visibility of English, Spanish and other languages, what languages tend to be employed more in word-formation processes, and if the shop owners are

consistent with the use of a certain language or if, on the contrary, they create hybrid varieties, combining English, Spanish or other languages.

It is worth mentioning that in the Valencian Community, where Alicante is located, Valencian (a variety of Catalan) is the co-official language with Spanish. However, in Alicante City (the capital of the province of Alicante) the use of Valencian is not as significant as in other neighbouring regions and the other two provinces. Besides, there is no local government law on the languages to be used in shop names, so the language choice depends entirely on owners.

### 3. Methodology

Previous literature on linguistic landscapes tends to consider a small number of streets, typically, in the city centre of the cities examined. This study, however, focuses on six of the most transited avenues — some with small shopping centres — and other minor streets in the area of Playa de San Juan, Alicante. The data was collected between March 2014 - 2015 and comprises a total of 258 shop names.

The methodology followed was the systematic compilation of shop names on signs or, in a smaller number of cases, shop windows along the streets. I annotated the following elements *in situ*: shop name, its geographical location, the type of shop or business, its size, products, and intended customers. For practical reasons, I could not interview all shop owners, but I did ask when I had some doubts either on the motivations behind the shop name or on any other aspect. I then created a file containing all the information compiled. Subsequently, I considered the language(s) of the shop name, how many words were in English, and whether they were prefixes or suffixes, single words, phrases, or clauses, if they were spelt wrongly or not, and if they included glosses.

### 4. Analysis and discussion of the data

Predictably, Spanish was the only language in 149 of the shop signs, representing 58% of the total. The second most frequently attested language found was English, which surprisingly occurred in a large number of them together with Spanish (42 names), in isolation (38), or with other languages (5) — the percentages for each variable are shown in Figure 1. This represents a 33% of shop names in which there are elements in English, in contrast to the 19% reported in Las Palmas de Gran Canaria (Luján-García 2010).

The total incidence of shop names in other languages (Italian, Valencian, French, etc.) was not substantial (only 17, that is, 6%), which does not mirror the status of Valencian as a co-official language in the Valencian Community.

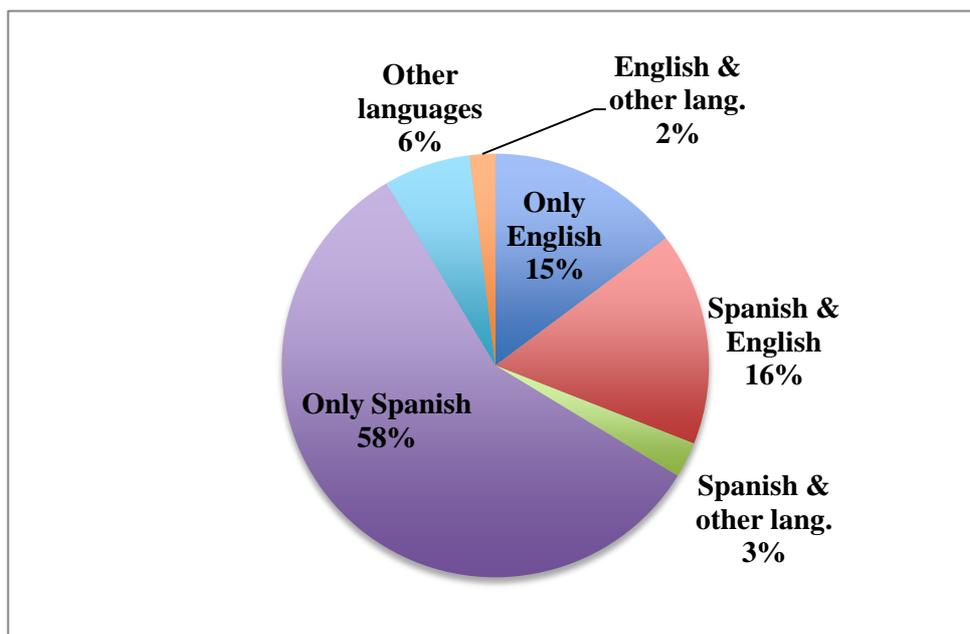


Figure 1 – Percentages of shops in English, Spanish and other languages

Having considered the percentages of the languages used, I will now describe the main trends identified within the 258 names analysed. I will devote a section to each trend and will finally draw some general conclusions. The main points to be discussed are as follows: (1) word-formation processes present in the data, (2) multilingual noun phrases, word elements and their rendering, (3) ambiguities at the lexical and syntactic levels, (4) the use of the ampersand and possessive genitive, (5) the taxonomy of proper names, and (6) English as a mark of prestige: fashion, “haute cuisine and couture”.

#### 4.1. Word-formation processes in business names

Overall, there is a low incidence of word-formation processes: out of the 85 shop names containing elements in English, 11.9% of the names have undergone some word-formation process, compounding being the most frequent (8.5%) followed by acronymy (3.4%).

As far as compounding is concerned, a wide range of lexical patterns can be pinpointed: first, there are combinations of English + English lexemes; some of them are already recorded in the *OED*, such as *neverland*, whilst others are non-normative neologisms (e.g., *park-line*, *clubland*); second, there is a considerably small number of Spanish + Spanish lexical occurrences (e.g., *marabierto*) which go beyond the scope of this paper and, therefore, will not be further discussed; and, third, there are compounds comprising English and neutral lexemes that may be Spanish or altered English morphemes (e.g. *urba[n]* in *urbacoast*) or even combining forms (e.g., *cine-* in *cinemark* as in *cinematography*), which renders their linguistic explanation problematic.

Besides, it may be argued that some of these cases epitomise new blends (i.e. *brunch* or *motel*-type words), but this explanation would signify that both lexical parts are in the same language. This may be difficult to determine given the fact that most roots or lexemes are cognates (e.g., *cine-*, *mov-* [(Eng.) *moveable* / (Sp.) *movible*] in *movistar*, *natur-* [(Eng./French) *nature* / (Sp./Latin) *natura*] in “Natur house”, etc.). The question of the precise types of word-formation processes involved in the commercial sector is open and should be reassessed in future projects with a larger dataset.

Other compounds that contain both Spanish and English elements include some of the following: *cabogolf*, *movistar*, *mimadog* and *graphenano*. The first three cases can be analysed according to the pattern Spanish + English — although with the aforementioned constraints if they are cognates — combining noun + noun (N+N) in *movistar* (*móvil* + *star*), and *cabogolf* (*cabo*+*golf*), which can also be interpreted as an instance of Spanish+Spanish lexemes if the etymological origin of *golf* is not taken into account.

*Mimadog* can be classified as a compound noun of the type verb + noun, in which the noun is the direct object of the verb, like the English word *pickpocket* (Bauer 1983). However, it would not be far-fetched to say that it was created following the rules of the Spanish compounding system, namely, the verb + noun compound — like *matasano*, *pararrayos* or *tocadiscos* — with the peculiarity that the second element of the compound is in English, and it is not pluralised.

*Graphenano* is a curious example of a noun + adjective (English + Spanish) construction. The first element, *graph*, could be a dated clipping of “graphic formula”, but, in fact, it is an innovative clipping of *graphene* (a material used to make nanotechnology); and the second element, *enano*, is likely to be interpreted as the Spanish adjective for “very small” in this context.

The origins of the word *graph* would not have been properly inferred by just looking at the shop name, but the shop’s website provides an explanation of the type of shop it is: it is an industrial Graphene manufacturer (see <[www.graphenano.com/](http://www.graphenano.com/)>). This shop name would possibly strike Spanish and English speakers as unusual because by reading the first lexeme (in English), one would expect the conventional, English syntactic structure — adjective + noun phrase — to be employed rather than the Spanish pattern of noun + adjective (NA) which is actually employed.

Delving deeper into the new words, regardless of the language in which they are written, the analysis can go a step further and sub-classify compounds according to whether or not they convey a coherent meaning since sometimes they are tautological, nonsensical combinations of words (e.g. *acarauto*) as I will explain in Section 4.3. The first and smallest group is composed of compounds whose linguistic meaningfulness can be called into question, as they seem like two independent words written together randomly; the referent is obscure, and in some cases, there is not even a more reasoned motivation behind than the sonorous effect, as in the case of *park-line*, which refers to a hairdresser’s. On the other hand, the largest second group encompasses words that, even though they are non-standard, may make sense in their context from a semantic viewpoint. This would be the case of *cinebank* (a sort of repository of films).

Finally, there are four acronyms: the first two acronyms, *PC* (Personal Computer) in “PC Coste” and *laser*, are so common that are almost unnoticeable, whereas the other two are more innovative: *BMC* stands for “Body Mind Connection” — as clarified on the very shop sign —, and the popular *Vodafone*, which stands for “Voice Data Fone”, the latter element being adapted (*phone* > *fone*).

#### 4.2. Multilingual noun phrases, word elements and their rendering

Shop names composed of multiple elements with a multilingual (generally, bilingual) nature can be classified according to some of the following trends:

- (1) English nouns (or gerunds — as in the case of *fishing* — which functionally occupy the same place as a noun) premodified by Spanish nouns: “Los Pelos Park”, “Cabo fishing” or “Canela food”, to name a few.

(2) Noun phrases in English following the determiner + adjective + noun structure (henceforth, DAN) or reduced versions, sometimes coordinated by an ampersand: “American Accent – English School”, “Films & Market Co.”, “Main Avenue”, “Top Queens”, “The Place”, “Personal Look”, “Outlet zone”, “The Beer Abbey”, etc.

(3) Translations present on some shop signs: “Peluquería – hairdresser’s Nacha”, “Magdalena Moreno: inmobiliaria – real estate”, “Cherries – Cerezas: moda infantil”, etc.

(4) Shop names that include a gloss to ‘clarify’ what kind of products or services are offered. Unlike the instances of literal translations, they provide more elaborate information: “Stefi nail’s [sic]: uñas de gel y porcelana”, “Personal look: productos de peluquería y estética” and “Cabo copy: centro de impresión digital” are some examples. The last but not least example found, “Mimadog: peluquería canina, dog groom, toiletteage canin” (See Figure 2), is particularly creative as it provides glosses in three different languages, namely French, Spanish and English.



Figure 2. An example of a truly multilingual shop sign

(5) English lexemes graphically adapted to match the phonemic reading of the words: “Peluquería canina *Snupy*”, “Cafetería *Charli II*” or “*Citiwagen* España”. This alteration, however, may be intentional — in order to avoid mispronunciations of English or to create eye-catching effects — or unintentional if the shop owner has not checked how these words are written in the original language.

(6) Combinations of English and Spanish words such as “Alba oro direct” “Urban: proyectos e interiorismo” “Boutique infantil: fashion children collection”, “Salón de juegos Relax”, “Cervecería Max”, “La Tiendita Cactus: Tex mex food, take away”. Some of these require further attention.

Within the last group, words such as *relax* could be regarded as occurrences of already recorded false Anglicisms (Rodríguez & Lillo 1997). Furiassi (2010) explains that *relax* is a false anglicism created out of a clipping in which the suffix has been eliminated (i.e., *relaxation* (n) > *relax* (n)). However, *relax* has already made its way into Spanish as a noun (see the *DRAE*), although it is *de facto* a verb in English.

The use of false Anglicisms in European languages is a complex phenomenon because, among other reasons, the same words may display variation in their treatment, depending on the recipient language considered (cf. Furiassi, Pulcini & Rodríguez 2012). Thus, additional research would be needed to describe the presence and evolution of false Anglicisms in the Spanish linguistic landscape.

In “La Loggia - Shop” the accompanying word, *shop*, suggests that *loggia* — although it is also recorded in English dictionaries — is treated as Italian and, therefore, its meaning needs clarification. The word *loggia* is fairly general in its prototypical sense and does not refer to a shop, but rather it is “a gallery or arcade having one or

more of its sides open to the air” (*OED*). From this perspective, this shop name could be regarded as either bilingual or trilingual: it is composed of the Spanish or Italian definite article *la*, the English word *shop* and the Italian *loggia*.

As observed, the *ad hoc* classifying criteria can be applied with limitations when loanwords are discussed: *Loggia* (is it Italian/English?), *boutique*, *Internet*, *golf*, etc. (are they French/English/Spanish/other languages?). However, if the words are adapted to a particular language, it signifies that they have been assimilated into the recipient language. For instance, in “TG láser” *láser* proves to have been modified and integrated into the Spanish lexical repertoire. Moreover, it also illustrates the unusual preservation of the stress in initial position, in opposition to those Anglicisms that are pronounced following the majoritarian, final-stressed syllable pattern of Spanish (e.g. *Internet* or *email*).

#### 4.3. Ambiguities at the lexical and syntactic levels

In this section, as well as in the section devoted to proper names, I bring up some conflicting issues when classifying shop names according to their language. I flesh out some of the difficulties that have arisen — such as the silent *e* — and discuss the role of syntax or clarifying phrases in discerning what is Spanish and/or English in some of the examples selected.

As already mentioned, there are a great number of cognates used in shop names. The tendency to select “neutral” roots that could belong to multiple Indo-European languages is a way of internationalising the shop name and, possibly, expanding the amount of prospective customers. Within this group of words sharing their etymological origin, the degree of variability concerning the inclusion of the silent *e* in shop names is particularly significant.

The silent *e* is the equivalent to the mute or obscure French *e*. Whereas in French it is frequently used (*proverbe*, *personne*, etc.), in present-day English it is not so common; this silent vowel is only employed to lengthen a preceding vowel or soften a previous consonant. The silent nature of the vowel may be the main cause for the (un)intentional “misspelling” of words such as *natur* [in “Natur House”] or *suprem* [in “Café Suprem”]. Nonetheless, if those truncated bases are expanded, they can be interpreted to belong to several languages (French, English, Spanish, etc.), which is why they could be analysed as intentional clippings. In other shop names, its irregular use may be due to other reasons. For instance, when examining the shop name “PC Coste”, whose initial element is in English, one would expect *cost* instead of *coste* (n.). This word, existing in Spanish, may also be regarded as an English modified word to match its Spanish counterpart. The same can be applied to the shop name “*Chocolat* – New York”, where the second noun phrase is in English, but the first French-origin element could have been modified deliberately. In these contexts, the reader’s knowledge of foreign languages plays a crucial role in the linguistic interpretation of these elements.

Another ambiguity encountered in shop names is “Super Europa”, which can be examined from multiple viewpoints: the nucleus of this noun phrase, *Europa*, might be the Spanish rendering of *Europe* but also — albeit more remotely — the mythological Greek princess *Europa* in English; and *super* could be (1) a prefix separated from a lexeme, (2) a Spanish adjective in which an acute accent is missing (*súper\**), or (3) a Spanish clipping standing for *supermarket* (*supermercado* > *súper\**). Nevertheless, it is more likely to be (4) an adjective in English since one of its senses (in reference to a manufactured product) is “superfine”. The two more plausible interpretations

concerning “Super Europa” are either that it is a case of hybrid use of English and Spanish or that it is phrase in Spanish containing a typo (i.e., *\*super*).

A remarkably ambiguous compound is *acarauto*: it contains what seems to be a prefix (i.e. *a-*) —which does not provide any pertinent information —, a lexeme (*car*), and the third element, *auto*, which can be interpreted in the following ways: (1) as a combining form abnormally used in postnominal position, or (2) as a clipping of a cognate (English *automobile* or Spanish *automóvil*). Whatever the case may be it is certain that this lexical reduplication is repetitive and seems unmotivated on purely linguistic grounds.

All in all, “neutral” words allow multiple and open interpretations, which might be intentionally designed to suit the owner’s purpose. The inference of their significance largely relies on the reader’s knowledge of languages, especially, when there are symbols such as the ampersand. This is also the case of “Images & Perceptions”, a subtitle of a book about Zheng He discussed by Edelman (2009:148):

Due to the ampersand, this title may be interpreted either as English (“Images and Perceptions”) or as French (“Images et Perceptions”). The interpretation depends on which language(s) the indexer knows. Entrepreneurs sometimes play with these double interpretations.

In addition, at the syntactic level, there is a certain amount of variation in constructions in which such “neutral” words as *café* are involved. Judging from the word order, I have established a provisional systematisation: in noun phrases the prototypical English structure is DAN, as already noted. Thus, I classify “Continental café” as English, whereas “Café O’clock” and “Café Suprem [sic]” are Spanish constructions with an element in English<sup>1</sup>. There are also instances of attributive nouns in noun phrases that could be in English or Spanish (“sushi bar”), but whose syntactic order determines that they were meant to be in English.

#### *4.4. The use of the ampersand and possessive construction*

The tendency to create hybrid and/or ambiguous shop names is also present in two widespread trends, namely the use of the ampersand (the sign &) and of the possessive inflection. I will first examine the use of the possessive construction.

As it is widely known, English uses both a possessive inflection (’s) and a prepositional construction introduced by *of*. This poses difficulties for Spanish-speaking people since Spanish only allows a prepositional phrase (e.g., *de mi hermana* ‘of my sister’). Odlin (1989:75) succinctly explains this distinction:

The possessive constructions in English and Spanish differ somewhat in their morphosyntactic characteristics. Thus, the Spanish phrase *los héroes de la nación* can translate into English either as *the heroes of the nation* or *the nation’s heroes*. A contrastive description of Spanish and English grammar in this area would posit a morphosyntactic but not a semantic difference.

Semantically, both constructions are the same, but the complexity for some Spaniards lies precisely in the rendering of Spanish prepositional constructions, which can also be translated into English by using an attributive noun. For instance, *fábrica de coches*

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<sup>1</sup> Phonologically, *suprem* seems to be closer to English than to Spanish and thus, even though it is misspelt, it is grouped into English words.

translates as ‘car factory’. This is even more complex if the non-native speaker encounters attributive plural nouns (e.g. *sports car*), which, although they are few, they are frequent words in English.

This uncertainty in the choice of a possessive construction creates a number of problems and tentative solutions: (1) the possessive is sometimes not included when needed, as in the case of the aforementioned phrase “fashion children collection”, where the apostrophe is missing; in other cases, (2) the apostrophe is wrongly used when it is not needed (e.g. “Kebab’s Fontana”), or (3) the shop name’s owners do not know how to inflect nouns in English and pluralise them with an apostrophe (as in “Stefi Nail’s” or “Ina Style Nail’s”). These “odd” constructions are characterised by the inclusion of a proper name, and, thus, it seems as if a possessive relation were also intended. Finally, a third alternative is found in “El pub de Jack”, which exemplifies a solution to avoid any possible mistakes by combining English content words (*pub* and *Jack*) and the Spanish function words *el* and *de* (English ‘the’ and ‘of’).

The inaccurate constructions previously discussed have been disseminated around the area surveyed, but, hopefully, new shop owners will be linguistically assessed and will amend their shop names.

As for the use of the ampersand, its pervasiveness in the Spanish linguistic landscape is not recent. Its visual character and brevity favours its presence over the orthodox *and* not only in international business names — e.g., Barnes & Nobles, M&M’s, Johnson & Johnson — but also in Spanish franchises such as “Pans & Company” and the fashion firms “Devota & Lomba” or “Victorio & Lucchino”. The ampersand usually coordinates proper names or initials, as it is also attested by the shop names analysed (e.g., Fanny & Sandra, J&B Peluquerías), although it may also be a choice between noun phrases in English (“Films & Market Co”, “Inmolux: real estate & Construction”) and in Spanish-English shop names (“Nanos & the papas”).

#### 4.5. Problematising the taxonomy of proper names

Shop names such as “Blanca”, “Juan”, or “Belén” are not problematic for Spanish speakers because they constitute a part of the repertoire of Hispanic names. However, what happens with “international” names? In our globalised world, it is difficult to trace the origins of certain names, especially if they are transliterated or adapted to the spelling and pronunciation of other languages. Names are sometimes “neutral” and could belong to many languages, which contributes to the impersonal character of the linguistic landscape.

To illustrate this complex phenomenon, I have selected some shop names whose classification depends on the indexer’s command of languages: “*Dyana Home*” “*Alisa España*”, “*Ina Style Nail’s*” or “*Desi Shoes*”. In those instances, extended linguistic background could assist in the arduous task of identifying their linguistic origin. Korzilius, van Meurs & Hermans (2006:174) establish a classification of proper names based on the “given/matter of choice” dichotomy:

“... in the case of names there is usually no choice between a Dutch and an English variant, since the name of a person or an organization is usually ‘a given’. However, if the name of an organization or a department contained meaningful English words, these were counted as English words, since in these cases the use of English is a matter of choice.”

Notwithstanding, this taxonomy seems rather subjective and difficult to apply since there may be underlying motivations behind the choice of names or surnames that are completely different from the owners’. Companies, medium-sized businesses, or even

local enterprises may have gained certain popularity with originally given surnames and have never changed them in order not to lose customers. A very well-known example of this is the world's largest chain of fast food restaurants *McDonald's*.

Consequently, shop names containing proper names have been classified according to the language of the rest of the elements (when there were more than one) or otherwise have been sorted into the "other languages" category (only if there was just a single word in English (e.g., the word *Spain*) and the identification was not plausible). This is another provisional endeavour to classify proper names, but these attempts are still subject to debate and revision.

#### 4.6. *English as a sign of prestige*

The longstanding prestige and influence of French in the realm of fashion has been recently contested by Anglo-Saxon culture, which is profoundly affecting European languages. Anglicisms are an everyday reality which reflect the need to categorise new concepts. However, loan words are not always used for linguistic reasons. Snobbery or pomposity are also some fundamental reasons for using English words instead of their Spanish counterparts (on this topic, see Rodríguez 1996). As Odlin (1989:278) states in relation to Spanish, "the language of almost every aspect of urban, sophisticated life reveals borrowing from English, but the language of the media, fashion, business, science and sport are particularly affected."

In the shop names analysed, there is, in fact, a predilection for English to display elitism. Many of the clothes names compiled include elements in English that tend towards the abstract and imprecise (e.g. "Top 29"), whereas others employ evocative names (e.g. "Top Queens"), which do not necessarily convey a meaningful message. MacGregor (2003:21) points out a very interesting, similar phenomenon in Tokyo:

"[t]he meaning is being communicated in Japanese, and the English (or other foreign language) is a status-enhancing embellishment, since English is equated with the West, which is equated with all kinds of positive images: high quality, high status, high society."

The specific vocabulary related to shops intended for women include the recurrent adjective *top*, the noun *style* and the label *new concept*, all of which use English as a means of reinforcing the exclusiveness of the services offered.

### 5. *Conclusions*

In line with LL research, the present study evidences the important role of English in the Spanish streets and the commercial sector, particularly in the shop names of a rapidly populated area over the past ten years: "Playa de San Juan", Alicante. Out of a total of 258 shop names, 58% of the shop names are only in Spanish, 16% in Spanish and English, 15% only in English, 6% in other languages, 3% in Spanish and other languages, and 2% in English and other languages. In this regard, my results differ considerably from those of the studies carried out in, for instance, Beijing (Jingjing 2013), Rome (Griffin 2004), or Tokyo (MacGregor 2003), as far as the presence of English is concerned, which is more prominent in the data that I have analysed.

Moreover, unlike previous research on the same topic, which has put a greater emphasis on quantitative analysis concerning the presence of English in monolingual and multilingual contexts, I have attempted to offer a panorama of the underlying linguistic and social implications in the choice of shop names. In the previous sections, I

have described the main trends, pinpointing both self-evident occurrences — the use of the ampersand or the (mis)use of the possessive construction — and more complex linguistic phenomena such as the use of cognates.

I have also tackled issues such as the taxonomy of proper names and ambivalent shop names at the lexical and syntactic level. After having established a tentative classification following criteria such as the type of elements that were in English (namely, prefixes, suffixes, phrases or multiple word elements) and the languages employed, I had to reassess the data in light of new possible interpretations. In this task, lexicographical sources such as the *DRAE* or the *OED* have played a very important role.

Some of the cases examined also unveil a surprising innovation on the shop owners' side: there are hybrid shop names — which combine elements from different languages in a very creative way —, glosses, translations, adapted words (e.g. “Snupy”, “Charli”), and cross-linguistic instances of word-formation processes. In this respect, it is worth noting the large number of compounds that, although they do not function both grammatically and semantically as units, they are valuable epitomes of linguistic creativity.

All of this would have gone unnoticed if it had not been studied carefully for the present paper, which has also served to explore the linguistic and non-linguistic reasons for English lexical loans in Spanish. Whereas some Anglicisms are used to convey new concepts (e.g., *Internet* or *laser*), others reflect elitism.

Thus, even though this comprehensive study has approached the topic of shop names from a formal linguistic perspective, it has also drawn on concepts from sociolinguistics like “impersonal multilingualism” and, undoubtedly, “linguistic landscape”. In this way, I have endeavoured to embrace the knowledge of different disciplines to give insights into the complexity of what an apparently seems to be a simple phenomenon.

The application of the trends depicted is limited to this geographical location, as the compilation of shop names was restricted to a particular area in Alicante, but even so, it may provide guidelines for future linguistic research into the field of linguistic landscape.

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# Negative inversion exclamatives and speaker commitment

Ai Taniguchi

This paper examines *negative inversion exclamatives* in English, e.g., *Isn't [that]<sub>F</sub> hideous!*. Traditional accounts of exclamatives would analyze this construction as encoding a high degree of *hideousness*, but I show that negative inversion exclamatives are compatible with ungradable predicates and extreme predicates, which suggests that the semantics of this construction is beyond that of *very*. I argue instead that Neg-Ex's denote a set of alternatives via focus, with an additional expressive layer that gives rise to a conventional implicature (CI) that the speaker is maximally committed to an alternative. At a broader level, this paper calls for a re-evaluation of what "exclamative" is as a natural class.

## 1. Introduction

Exclamative constructions such as *What an idiot!* and *Isn't he an idiot!* express some out-of-the-norm reading of the predicate. Zanuttini & Portner (2003) and Rett (2011) make an explicit claim that what makes an exclamative an exclamative is its *degree interpretation*: *What an idiot!* means that the referent is an idiot to a very high degree. In this paper, I challenge this claim that exclamatives necessarily encode degree extremity, using data from what I will call *negative inversion exclamatives* (Neg-Ex) in English as driving examples. I argue instead that Neg-Ex's denote high speaker commitment.

Neg-Ex's syntactically resemble inverted negative polar questions (e.g., *Isn't that hideous?*), but does not have the force of questions. Instead, it intensifies the propositional content, denoting the speaker's heightened emotion towards the at-issue proposition, as exemplified in (1)-(3).

- (1) Isn't [that]<sub>F</sub> hideous!  
≈ 'Wow, that is hideous!'
- (2) Isn't [Mina]<sub>F</sub> sassy!  
≈ 'Wow, Mina is sassy!'
- (3) Doesn't [she]<sub>F</sub> sound delightful!  
≈ 'Wow, she sounds delightful!'

Note that the focus (indicated by the subscript *F*) is obligatory; this will be addressed in Section 4.2. At first glance, the contribution of the Neg-Ex in (1)-(3) may be glossable as *very*; that is, (1)-(3) perhaps mean ‘that is very hideous,’ ‘Mina is very sassy,’ and ‘she sounds very delightful,’ respectively. However, the data in (4)-(5) pose a problem for this approach.

- (4) a. Aren’t [you]<sub>F</sub> a linguist!  
 (...you’re always asking for grammaticality judgments, even during faculty meetings!)
- b. Isn’t [she]<sub>F</sub> a teacher!  
 (...she’s always telling people facts and quizzing them afterwards!)
- (5) a. Isn’t [that]<sub>F</sub> fantastic!  
 b. Isn’t [this place]<sub>F</sub> freezing!

(4a) and (4b) involve ungradable predicates, which — unlike gradable predicates like *idiot* or *stupid*— cannot be modified by degree words like *very* (Kennedy & McNally 2005), or the nominal counterpart *big* (Morzycki 2012b), as shown in (6)-(7).

- (6) He is a big idiot/nerd (gradable predicates)  
 ‘He is an idiot/nerd to a high degree’
- (7) \* He is a big linguist/teacher (ungradable predicates)  
 Intended: ‘He is a linguist/teacher to a high degree’

If Neg-Ex’s are equivalent to *very*, we predict the examples in (4) to be unacceptable, which is not the case. Similarly, predicates like *fantastic* and *freezing* in (5) that denote the maximum end of the scale are not compatible with *very* by virtue of already denoting an extreme (Morzycki 2012a).

- (8) \* That is very fantastic/freezing (extreme predicates)  
 Intended: ‘That is fantastic/freezing to a high degree’

If Neg-Ex’s denote *very*, (5a) and (5b) should be unacceptable, contrary to actual data. My proposal to account for this observation will be that Neg-Ex’s encode the speaker’s maximal commitment to the truth of the proposition at hand, rather than the intensification of some gradable property.

The punchline of this proposal is that language has various modes of intensification. In particular, my suggestion is that not all exclamatives intensify in the same way. What we have the impulse to call “exclamatives” all encode extraordinariness or noteworthiness in some intuitive sense, but it is not formally clear what the range of such intensification is. In fact, at the most skeptical level, it is unclear if these so-called “exclamatives” form a natural class at all. What we gain from examining understudied constructions like Neg-Ex’s is this possible re-evaluation of what makes an illocutionary class an illocutionary class.

In Section 2, I will briefly outline further empirical puzzles associated with this exclamative construction. In Section 3, I argue that existing analyses of exclamatives cannot account for the present phenomenon. In Section 4 I make the connection between Neg-Ex’s and speaker commitment explicit. Section 5 provides a formal semantic account of Neg-Ex’s, followed by a discussion and conclusion in Section 6 and Section 7.

## 2. Empirical puzzles

As previewed in the previous section, Neg-Ex's have the surface form of inverted negative polar questions (Neg-Q). The parallel is shown in (9) and (10) below.

- |  |  |
|--|--|
| (9) Negative inversion exclamatives <sup>1</sup> | (10) Inverted negative polar questions |
| a. Isn't [he] <sub>F</sub> an idiot!             | a. Isn't he an idiot?                  |
| b. Aren't [you] <sub>F</sub> lucky!              | b. Aren't you lucky?                   |
| c. Didn't [Mina] <sub>F</sub> steal the show!    | c. Didn't Mina steal the show?         |

The two are distinguishable by their illocutionary force. While Neg-Q's are true answerable questions, Neg-Ex's do not have an interrogative force.

- |                       |                                      |
|-----------------------|--------------------------------------|
| (11) Neg-Q            | (12) Neg-Ex                          |
| A: Isn't he an idiot? | A: Isn't [he] <sub>F</sub> an idiot! |
| B: He's an idiot.     | B: ? He's an idiot.                  |

Note that this is a departure from Zanuttini & Portner (2003)'s position that the negative inversion construction is not a true exclamative, but rather a question. However, it is not clear whether Zanuttini & Portner are referring to Neg-Ex's or Neg-Q's, especially without reference to the prosody of each construction. This brings us to an observation unaccounted for in the existing literature: Neg-Ex's have special intonational contour. There is obligatory focus on the subject in Neg-Ex's, but Neg-Q's have no such requirement.

- |   |                           |
|---|---------------------------|
| (13) a. Isn't [he] <sub>F</sub> an idiot! | (Neg-Ex, subject focused) |
| b. * Isn't he an idiot!                   | (Neg-Ex, no focus)        |
| c. Isn't he an idiot?                     | (Neg-Q, no focus)         |

I will use this fact about focus to make my secondary claim in this proposal: Neg-Ex's rely on alternatives, mimicking question semantics.

## 3. Previous analyses of exclamatives

Before proceeding to the analysis, a discussion about exclamatives will be useful. There are two main accounts of the semantics of exclamatives: the question approach (Zanuttini & Portner 2003) and the degree approach (Rett 2011). More recently, Wood (2014) has proposed an analysis of Neg-Ex's specifically. I argue that none of the existing accounts extend straightforwardly to the present phenomena.

### 3.1. Question approach

Zanuttini & Portner (2003) assume that exclamatives derive from actual questions, meaning that WH-Exclamatives (WH-Ex) such as *What things John eats!* have the same basic semantics as

<sup>1</sup>The term "negative" in the label merely refers to syntactic negation; there is neither a logical notion of negation in the semantics, nor a requirement for a negative-attitude predicate for this construction.

the question *What things does John eat?*. Adopting Hamblin (1973)'s semantics of questions, Zanuttini and Portner assume that questions are sets of alternatives. That is, the denotation of *What things does John eat?* is the set of answers to this question. If the context of this utterance is the kinds of peppers John eats, then the domain of quantification is the types of peppers that John might eat, as exemplified in (14).

$$(14) \quad \llbracket \text{What things does John eat?} \rrbracket = \left\{ \begin{array}{l} \text{John eats poblanos} \\ \text{John eats serranos} \\ \text{John eats jalapenos} \end{array} \right\}$$

Exclamatives are exactly like this, except that the domain *widens*; what sets exclamatives apart from questions is the inclusion of an exceptional alternative that would not normally be in the domain. Under the same context, the alternative set for the exclamative *What things John eats!* would include *John eats habaneros*, which are unlikely peppers to be eaten, as in (15).

$$(15) \quad \llbracket \text{What things John eats!} \rrbracket = \left\{ \begin{array}{l} \text{John eats poblanos} \\ \text{John eats serranos} \\ \text{John eats jalapenos} \\ \text{John eats habaneros} \end{array} \right\}$$

This widening effect is responsible for the deviation-from-the-norm reading. However, if we were to apply domain widening to inversion exclamatives, it is not clear how this would work.

$$(16) \quad \begin{array}{l} \text{a. } \llbracket \text{Isn't he an idiot?} \rrbracket = \left\{ \begin{array}{l} \text{He is an idiot} \\ \text{He is not an idiot} \end{array} \right\} \\ \text{b. } \llbracket \text{Isn't [he]}_F \text{ an idiot!} \rrbracket = \left\{ \begin{array}{l} \text{He is an idiot} \\ \text{He is not an idiot} \\ \text{???} \end{array} \right\} \end{array}$$

Domain widening is not directly extendable to exclamatives with yes/no question forms since answers to yes/no questions are binary.

### 3.2. The degree approach

Rett (2011)'s position is that exclamatives do not have the semantics of questions. For her, the exclamative interpretation is the result of two illocutionary operators: exclamation force operator (E-Force) and a degree measurement operator (M-Op).

$$(17) \quad \text{M-OP: } \lambda d \lambda P \lambda x. P(x) \wedge \mu(x) = d$$

$$(18) \quad \text{E-FORCE}(p), \text{ uttered by } s_C, \text{ is appropriate in a context } C \text{ if } p \text{ is salient and true in } w_C. \\ \text{When appropriate, E-FORCE}(p) \text{ counts as an expression that } s_C \text{ had not expected that } p.$$

E-Force operates at the sentential level, contributing to the evaluative content of the exclamative: the speaker is surprised at the fact that some degree holds for a property, and this degree is noteworthy in some way (i.e., very high). In the case of *How beautiful she is!*, E-Force expresses the speaker's surprise that the referent is extraordinarily beautiful. When the exclaimed

property lacks a degree argument (e.g., *What a cat!* where *cat* is not gradable), M-Op gives it a “freebie degree”: It assigns a contextually determined scale to non-gradable predicates (e.g., the scale “beauty” for a cat). As a result, E-Force is felicitous even for nominal properties. An exclamative, then, is essentially the speaker being surprised at the fact that a specific degree holds of some degree (or degree-coerced) property. The derivation of the WH-exclamatives *What desserts John baked!*, for example, would proceed as follows.

- (19) What desserts John baked!
- a.  $\llbracket \text{M-Op desserts} \rrbracket = \lambda d. \lambda x. \text{desserts}'(x) \wedge \mu(x) = d$
  - b.  $\llbracket \text{What desserts John baked} \rrbracket$   
 $= \lambda d. \exists x [\text{baked}'(j, x) \wedge \text{desserts}'(x) \wedge \mu(x) = d]$

M-Op has made the predicate *desserts* gradable, and its scale would be contextually supplied. At this point a degree  $d'$  would be provided by the context, leaving the unbound expression  $\exists x [\text{baked}'(j, x) \wedge \text{desserts}'(x) \wedge \mu(x) = d']$ . E-Force supplies the existential closure.

- (20)
- a.  $p = \exists x [\text{baked}'(j, x) \wedge \text{desserts}'(x) \wedge \mu(x) = d']$
  - b. E-FORCE( $p$ ) counts as an expression if  $\exists d'$  such that  $s_C$  had not expected that  $d' \in D$
  - c. Existential closure via E-FORCE:  $\exists d'. \exists x [\text{baked}'(j, x) \wedge \text{desserts}'(x) \wedge \mu(x) = d'] +$   
 Illocutionary force “speaker didn’t expect  $p$ ”

*What desserts John baked!* therefore essentially means that there is some gradable property that holds of the desserts that John baked (e.g., tasty), and the speaker is surprised that this holds at such a high degree. Rett discusses how E-Force and M-Op apply to positive inversion exclamatives<sup>2</sup> like (21), the affirmative cousin to Neg-Ex’s.

- (21) Wow, did Sue win that race!

Her observation is that (21) cannot be expressing noteworthiness about the fact that *Sue* won the race, which is an individual-oriented reading. What it must mean is that the way in which *Sue* won the race is noteworthy in some way, which is an event-oriented reading. On these grounds, she claims that inversion exclamatives denote a degree property, and that this degree property is associated with eventualities. Furthermore, the eventualities inherit their degreehood from M-OP. She remains agnostic as to why inversion exclamatives specifically care about eventualities.

The following data are problematic for Rett’s account.

- (22)
- a. # (Boy), is she a teacher! (positive inversion exclamative)
  - b. Isn’t [she]<sub>F</sub> a teacher! (negative inversion exclamative)

As with WH-exclamatives, the semantics of positive inversion exclamatives will not be explored in this paper (see Taniguchi (in preparation)), but what matters is that positive and negative inversion exclamatives are not the same creature: the positive exclamative is fully incompatible with ungradable predicates. If the target of M-OP is what distinguishes different exclamative constructions, then what is to be made of Neg-Ex’s, which clearly do not behave in the same way as its affirmative sibling? It is unclear how M-OP would be manipulated to distinguish the two.

<sup>2</sup>She calls them *inversion exclamatives*

## 3.3. Wood (2014): Neg-Ex and SO

Wood (2014) is the first to observe the selectiveness of Neg-Ex's in terms of its predicates<sup>3</sup>, as shown in (23).

- (23) a. Aren't you pretty!  
 b. Isn't that a relief!  
 c. ? Isn't that a bus!

The observation that drives his analysis is that predicates that Neg-Ex's license are compatible with the degree modifier *so/such*.

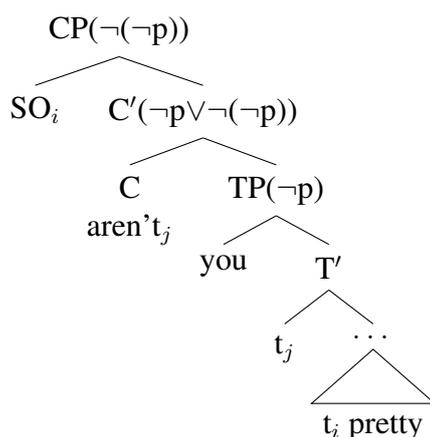
- (24) a. You are so pretty  
 b. That is such a relief  
 c. ? That is such a bus

Wood initially assigns an asterisk to data points (23c) and (24c), but later observes that there are contexts in which the Neg-Ex is acceptable, such as (25) (slightly modified from his version here).

- (25) [Context: A soccer mom manages to fit the entire soccer team into her van. You exclaim:]  
 Isn't [that]<sub>F</sub> a bus!

It is not clear whether (24c) improves in the same context, but what matters for Wood is the connection between *so/such* and Neg-Ex's. Following this, Wood proposes a covert SO operator as a part of the semantics of Neg-Ex's.

- (26) Aren't you pretty! (Wood 2014)



The SO operator, which originates with the predicate, is responsible for the supposed exclamative degree reading ( $\approx$  'You are so pretty'). A question feature in C takes its complement proposition and turns it into a polar question: e.g., "Is it the case that you're not pretty ( $\neg p$ ), or is it not the case that you're not pretty ( $\neg\neg p$ )?". Furthermore, the SO operator moves to

<sup>3</sup>He calls them *yes/no exclamatives*; the phenomenon is the same.

Spec,CP and picks the affirmative answer to this question: “It is not the case that you’re not pretty” ( $\neg\neg p$ ). Conceptually, Wood connects SO’s affirmative operation to the close link degree words like *so* and *too* have with affirmation — e.g., *I think so, I will dance too*. In this way, this account pays a nice tribute to the polar question syntax of this construction, something that the previous accounts could not necessarily do.

However, Wood’s analysis is problematic with predicates of extremity, replicated below.

(27) Isn’t [this place]<sub>F</sub> freezing!

Considering that extreme predicates cannot take degree modifiers (<sup>?</sup>*this place is so freezing*), why (27) is acceptable is not clear under his story. Furthermore, it is not fully clear why (25) must be the type of context for the Neg-Ex to be felicitous, and not, for example, a context in which you are exclaiming about a very large bus. In my proposal, this fact will not be an accident. Moreover, while Wood does not address the obligatory subject focus in Neg-Ex’s, his account as is does not have an explanation for the prosodic effects.

#### 4. Explaining the puzzles

##### 4.1. Speaker commitment, not extreme degree

The data from Section 3.3 suggest that a predicate need not be modifiable with *so* in order to be compatible with the Neg-Ex construction. I propose that Neg-Ex’s do not necessarily express a predicate of an extreme degree, but rather that it encodes high speaker commitment. One warning deserves mention. While Wood (2014)’s degree SO analysis fails to capture some data, the degree word *so* is not completely irrelevant to speaker commitment. Potts (2005) and Irwin (2014) observe that certain versions of *so* can express high speaker commitment, as in the following example in (28).

(28) People are *so* wearing flip-flops this season.

Roughly glossable as “definitely,” *Drama SO* — as Irwin (2014) calls it — involves intensification at the expressive level. (28) does not necessarily mean that there is a high number of people wearing flip-flops this season; rather, it means that the speaker is convinced that there is a flip-flop trend this season. While Wood does not make the explicit connection between *so* and speaker commitment, I do not deny that Wood’s intuition is largely congruous with my own.

Speaker commitment can be best thought of as a speaker-oriented scale that measures how convinced the speaker is of some propositional content. Consider the English adverb *totally*, one interpretation of which is a speaker-oriented reading (Beltrama 2014).

(29) Beltrama (2014)

- |    |  |                          |
|----|--|--------------------------|
| a. | The tank is totally full                       | (Lexical scale)          |
|    | Paraphrase: ‘The tank is full to the brim’     |                          |
| b. | Dinosaurs are totally extinct                  | (Precision scale)        |
|    | Paraphrase: ‘Dinosaurs are absolutely extinct’ |                          |
| c. | We totally won the game                        | (Speaker-oriented scale) |
|    | Paraphrase: ‘I’m telling you, we won the game’ |                          |

*Totally* in (29a) measures along the pure 0%-to-100% scale of fullness. (29b) on the other hand measures the precision of extinctness; are they there's-two-of-them-left *extinct*, or there's-none-of-them-left *extinct*? Of interest is the *totally* in (29c), which has yet another meaning: the speaker is highly committed to the fact that they won the game. While Beltrama (2014) does not note this, the speaker-oriented reading of *totally* is even more clear when truncated as *totes*. When *totally* is pronounced *totes*, even predicates that tend to take the lexical or the precision *totally* obligatorily take on the speaker-oriented reading.

- (30) a. The tank is *totes* full (\*Lexical scale / ✓ Speaker-oriented scale)  
Paraphrase: 'I'm telling you, the tank is full'
- b. Dinosaurs are *totes* extinct (\*Precision scale / ✓ Speaker-oriented scale)  
Paraphrase: 'I'm telling you, dinosaurs are extinct'
- c. We *totes* won the game (✓ Speaker-oriented scale)  
Paraphrase: 'I'm telling you, we won the game'

That the lexical scale is not available in *totes* can be shown in the following context of *full*.

- (31) A customer's beer glass is 90% full.  
A: Excuse me, my glass is not full; my beer wasn't poured to the brim.  
B: # It's *totally* full, don't complain! (Lexical scale)  
B': It's *totes* full, don't complain! (Speaker-oriented scale)

If a customer complains that a 90% full glass is not full to the brim, the server cannot retort that it indeed is *totally* full because that is simply false. If *totes* also has the lexical scale meaning, B's response should not be any better than B's. However, *totes full* is in fact felicitous in this context: the speaker is completely convinced that the glass content meets the standard of fullness.

This obligatory speaker-oriented reading of *totes* can help us probe for speaker commitment in Neg-Ex's. Consider the following context in which not thanking someone is typically considered rude.

- (32) A: John didn't thank Mina for the gift.  
B: That's rude ... I suppose.  
B': ? That is *totes/totally* rude ... I suppose.  
B'': ? Isn't [THAT]<sub>F</sub> rude! ... I suppose.

B's response is felicitous; the speaker recognizes that John's action is socially considered rude but he does not have to be highly committed to this conviction, as the follow-up statement "I suppose" indicates. This is not the case with *totes*. B's attempt to attenuate his *totes rude* commitment with "I suppose" is contradictory, since *totes* signals high speaker commitment. Similarly for B'', following a Neg-Ex up with a commitment-weakening statement is not felicitous, suggesting that this construction has a speaker-oriented interpretation similar to *totes*. Note that a high degree (i.e., *very*) does not necessitate high speaker commitment, as (33) shows.

- (33) A: Dinner is at 4pm.  
B: That's *very* early for dinner ... I suppose.  
B': ? That is *totes/totally* early for dinner ... I suppose.

B'': ? Isn't [THAT]<sub>F</sub> early for dinner! ... I suppose.

B can recognize that 4pm is quite early for dinner, but he need not be judgmental about this. B' and B''s *totes*/Neg-Ex responses respectively are still contradictory with the qualifying statement.

#### 4.2. Focus

Next, I will specify exactly *what* the speaker is committed to in a Neg-Ex, using facts about focus. The key observation is that Neg-Ex's require focus on its subject. An example is replicated below.

- (34) a. Isn't [John]<sub>F</sub> an idiot!  
 b. \* Isn't John an idiot!

Focus traditionally analyzed as evoking alternatives (Rooth 1992). A focused expression comes with two values: A regular semantic value, and a focus semantic value. Consider the following example in (35).

- (35) Bill introduced [Mary]<sub>F</sub> to John.  
 a. Semantic value: **introduce(b,m,j)**  
 b. Focus semantic value:  $\left\{ \begin{array}{l} \text{Bill introduced Mary to John} \\ \text{Bill introduced Sarah to John} \\ \text{Bill introduced Kyle to John} \\ \vdots \end{array} \right\}$

*Bill introduced [Mary]<sub>F</sub> to John* compares *Bill introduced Mary to John* to other propositions of the form *Bill introduced x to John*; Rooth (1992) suggests that a single focus operator introduces the alternative set as a presupposition. In the case of (35), there is a presupposition that *Bill introduced Mary to John* is a member of a set that includes *Bill introduced Mary to John* and at least one other proposition of the form *Bill introduced x to John*. If the question in the context is *Who did Bill introduce to John?*, (35) is a felicitous answer because the ordinary semantic value of this question is a set of alternatives of the same form as (35b) and already present in the context — the presupposition is satisfied. *[Bill]<sub>F</sub> introduced Mary to John*, however, is not a felicitous answer because it needs a presupposition of the form {Bill introduced Mary to John, Kathy introduced Mary to John ... }; the question at hand does not have this sort of alternative set, thus failing to satisfy the presupposition.

Following suit, the focus in the Neg-Ex in (34) should also be sensitive to alternatives. Given the focus on the subject, we could imagine a set of alternatives such as:

- (36)  $\left\{ \begin{array}{l} \text{John is an idiot} \\ \text{Bill is an idiot} \\ \text{Sarah is an idiot} \\ \vdots \end{array} \right\}$

The subject focus can easily be connected to speaker commitment at the expressive level by saying that the speaker is highly convinced that *John* in particular is an idiot. I do not have an explanation for why Neg-Ex's commit the speaker to the proposition relevant specifically to the subject, but it could be that there are other exclamative constructions that commit the speaker to a proposition based on the predicate, for example. WH-exclamatives (e.g., (37)), whose natural focus falls on the predicate, may be a fruitful place to search for this contrast.

(37) What an [idiot]<sub>F</sub> John is!

I leave this for future research. For present purposes, I use this sensitivity of Neg-Ex's to alternatives to advocate for a question approach of exclamatives, not a degree approach.

### 5. Analysis

My proposals thus far are:

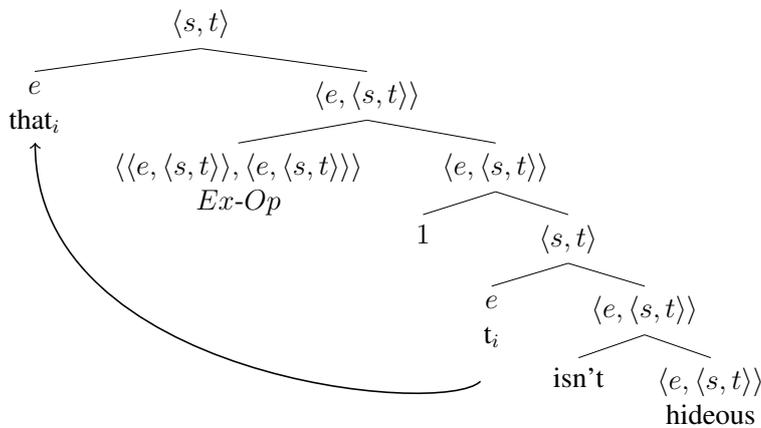
1. In a Neg-Ex, the subject must be focused because it is underlyingly a question
2. Neg-Ex's express the speaker's high commitment to the proposition

To model proposal 1, I will introduce an alternative-sensitive operator EX-OP that introducesthetic-question-based alternatives ("thetic alternatives" henceforth). Proposal 2 will be modeled via conventional implicatures (Potts 2007).

Silent alternative introducers occur elsewhere in semantics, most notable being Chierchia (2006)'s silent *O(nly)* operator for scalar terms. The present EX-OP takes in a property *f* and generates a question of the form *What/Who is f?* Finally, this "question" is internally answered by the focused subject element. Like Wood (2014), I endorse the intuitive charm of inversion as a question that answers itself. Let us take stock:

(38)  $\llbracket \text{EX-OP} \rrbracket = \lambda f_{\langle e, st \rangle} . \lambda y . \lambda w . f(y) \in \{p : \exists x [p = f(x) \wedge p(w)]\}$

(39) Isn't [that]<sub>F</sub> hideous!



- (40) a.  $\llbracket (\text{isn't}) \text{ hideous} \rrbracket = \lambda x . \lambda w . \mathbf{hideous}(w)(x)$   
 b.  $\llbracket t_i (\text{isn't}) \text{ hideous} \rrbracket = \lambda w . \mathbf{hideous}(w)(x)$   
 c.  $\llbracket 1 t_i (\text{isn't}) \text{ hideous} \rrbracket = \lambda x . \lambda w . \mathbf{hideous}(w)(x)$

- d.  $\llbracket \text{EX-OP } 1 \ t_i \ (\text{isn't}) \ \text{hideous} \rrbracket = \lambda y. \lambda w. \mathbf{hideous}(w)(y) \in \{p : \exists x[p = \lambda w. \mathbf{hideous}(w)(x) \wedge p(w)]\}$
- e.  $\llbracket \text{this}_i \ \text{EX-OP } 1 \ t_i \ (\text{isn't}) \ \text{hideous} \rrbracket = \lambda w. \mathbf{hideous}(w)(\text{that}) \in \{p : \exists x[p = \lambda w. \mathbf{hideous}(w)(x) \wedge p(w)]\}$

We start with the proposition *that is hideous*. The crucial operation here is the raising of the subject *that* at LF, leaving the unbound expression in (40b). The lambda abstraction in (40c) opens the *hideous* predicate back up again. This allows for us to introduce EX-OP to raise the question *What is hideous?* ( $\{p : \exists x[p = \lambda w. \mathbf{hideous}(w)(x)]\}$ ) in (40d), which is also awaiting some individual to satisfy the answer to this question ( $\lambda y. \lambda w. \mathbf{hideous}(w)(y) \in \dots$ ). In (40e), this ends up being the subject that was moved earlier, making this a self-answered question.

This alternative-based semantics manifests as focus on the answer, *that*. However in order for this question-answer operation to work, the lambda abstraction must happen below EX-OP, and not immediately below *that* as canonical raising operations do. This is perhaps some restriction posed by inversion or the EX-OP itself; I will leave this for further research.

At this point, the at-issue meaning of *Isn't that hideous!* is 'What is hideous? *That* is hideous.' Adding speaker commitment to this meaning is the final touch. Following Beltrama (2014), I will model speaker commitment as a conventional implicature (CI) in the style of Potts (2007).

$$(41) \quad \llbracket \text{EXCL/totally} \rrbracket = \lambda p_a [\mu(p)(s) = \mathbf{max}(\mu)]_c$$

$$(42) \quad \mathbf{Isn't Steve ugly!}: t^a$$

$$\bullet$$

$$\mathbf{EXCL}(\mathbf{Isn't Steve ugly!}): t^c$$

$$\mathbf{EXCL}: \langle t^a, t^c \rangle \quad \mathbf{Isn't Steve ugly!}: t^a$$

An exclamative operator (a silent *totally*) takes in a proposition *p*, and  $\mu$  measures the degree of speaker *s*'s commitment to this proposition; this returns the maximal degree of  $\mu$ . *a* is an at-issue type, and *c* is a CI type. This is essentially function application, only with the returned value being of an expressive type. In addition to this, the multi-tiered bullet ( $\bullet$ ) duplicates the at-issue meaning. This allows for a separate treatment of the at-issue and CI meanings, which is crucial for Potts (2007) in accounting for the scopeless and speaker-oriented nature of expressives (e.g., *Clinton says the damn Republicans should be less partisan* — *damn* is the attitude of the speaker, not Clinton).

This analysis ultimately characterizes Neg-Ex's as the speaker's maximal commitment to an answer to a question: *Isn't [that]<sub>F</sub> hideous!* generates the question *What is hideous*, and answers *that* — but not just *that* — *definitely that*. Note that a context in which a speaker is committed to a proposition is likely one in which a property holds of some individual to a high degree. That is, the speaker will likely be very committed to *that is hideous* if that thing is extremely hideous. A speaker-commitment account such as this one captures the deviation-from-the-norm spirit of exclamatives without directly appealing to gradability or extreme degrees.

Speaker commitment allows for us to explain the compatibility of Neg-Ex's with degree-incompatible predicates (e.g., predicates of extremity (27) and ungradable nouns (4)/(25), examples replicated below:

- (43)  $\mathbf{Isn't [this place]_F freezing!}$   
 $\approx$  'This place is totally/totes freezing'

(44) [Context: A soccer mom manages to fit the entire soccer team into her van. You exclaim:]

Isn't [that]<sub>F</sub> a bus!

≈ 'That is totally/totes a bus'

Extreme predicates like *freezing* do not repel speaker commitment: as long as there is potentially a question of whether *this place* indeed is freezing in the discourse, the speaker is allowed to show a strong commitment to the answer, *this place is freezing*. The same holds for ungradable predicates: you are, in principle, allowed to be strongly committed to the fact that something is a *bus* or a *teacher*. Since the question of whether something is a *bus* is typically objectively resolved — a bus is a bus if on average it has enough properties of a bus (Sassoon 2011, 2013) — *isn't [that]<sub>F</sub> a bus!* particularly requires a context in which the criteria for whether something is a bus is under discussion, such as with the soccer mom scenario above. The connection to *totally/totes* is a clear one here: *that is totally/totes a bus* is only felicitous if for some reason that thing is potentially *not* a bus. For gradable predicates like *idiot*, this sort of question under discussion is an easy one to accommodate. Since gradable predicates come with an inherent standard, or a cut-off point for whether something counts as e.g. an *idiot* based on the degree to which it falls on the *idiot* scale, the question can always be about where this standard is for the speaker, and whether the individual under discussion surpasses this standard.

This makes an additional prediction: a context in which there is absolutely no question as to if a property holds of some individual should rend Neg-Ex's infelicitous, regardless of the gradability of the predicate. This is why the exchange in (45) below is a strange one.

(45) [Context: You knew that Shaq O'Neal was tall, but you hadn't seen him in person until this very moment. You exclaim:]

? Aren't [you]<sub>F</sub> tall!

Intended: ≈ 'You are totally/totes tall'

If felicitous, there is something strangely sarcastic or dismissive about exclaiming *aren't [you]<sub>F</sub> tall!*<sup>4</sup> to Shaq in this situation because there is not a question of whether he counts as tall. Under the present analysis this can be cashed out as illicit speaker commitment: deliberately taking a position in committing oneself to an obviously true proposition is a strange discourse move.

## 6. Discussion

Some issues, both analytical and empirical, remain unaddressed. One issue with the proposed semantics of EX-OP, perhaps more aesthetic than technical, is whether we actually want a WH-question semantics for Neg-Ex's given that they resemble yes/no questions. If we do assign Neg-Ex's a yes/no question semantics, the advantage is that we can get away with saying that exclamatives literally have the semantics of their question counterparts. The disadvantage is that the facts about focus would require an alternate explanation since yes/no questions do not require focus on the answer. More empirical support for the WH semantics and covert subject raising is needed to strengthen the current proposal. This is currently under investigation.

Another element that I remain agnostic about in the derivation is the pre-posed expletive negation *n't*. Clearly, the negation is not interpreted in the logical sense since *isn't that hideous!*

<sup>4</sup>Compare this to *Boy, are you tall!* or *How tall you are!*, which are sincere and felicitous

does not mean that that is *not* hideous, but it is too strong of a claim to say that the negation has no contribution syntactically and semantically. While what exactly licenses expletive negation varies from analysis to analysis (Horn 2010; Espinal 1992; Tovena 1996; Abels 2005), the common denominator is that it is some sort of modality marker, seen in constructions that evoke nonveridicality, or speaker uncertainty (Yoon 2013; Giannakidou 2006), such as in (46).

- (46) I'll see if I can't finish this by midnight  
'I'll see if I can finish this by midnight, but there is no guarantee'

Expletive negation in inverted negative polar questions (Neg-Q's) involve modification at an epistemic level as well. Neg-Q's like *Isn't that hideous?* are not normal yes/no questions; it has been abundantly observed in the literature that they involve some sort of speaker bias for the positive answer (Gutzmann & Castroviejo Miró 2011; Romero & Han 2002, 2004; Ladd 1981; Han 1998), i.e., *that IS hideous*. Consider the following contrast.

- (47) (Pope 1976)  
a. Weren't you at the scene of crime at 10:00 on the night of the murder?  
b. Were you at the scene of crime at 10:00 on the night of the murder?

If (47) are questions from a criminal investigation, (47a) and (47b) have two different interpretations. In (47a) with the negation, it is backgrounded that the interrogator believes that the suspect indeed was at the scene of crime, while (47b) has no such implication; the latter is an honest elicitation of information. One analysis of these biased questions proposes that the negation triggers an epistemic question about how certain one is about the truth of a proposition, not a simple at-issue yes/no question (Romero & Han 2004, 2002). For example, *isn't that hideous?* informally means 'are we certain that *that is hideous* should be in the common ground?'

While a more detailed analysis will not be explored here, a possibility that I entertain is the connection Neg-Ex's like *isn't [that]<sub>F</sub> hideous!* has with this notion of expletive negation in Neg-Q's like *isn't that hideous?*. If a Neg-Q raises a question about certainty and a Neg-Ex conventionally implicates certainty via speaker commitment, then the connection is a hard one to ignore. The abridged point here is that speaker commitment is not completely off the radar in terms of negation, a bonus point for the present proposal. I leave this for future research.

One final observation that I have not discussed in this paper is that Neg-Ex's are most natural with pejorative predicates (e.g., idiot), and when they do take meliorative predicates (e.g., genius), the natural interpretation is a sarcastic one that turns it into a pejorative meaning, as exemplified in (48).

- (48) a. Aren't [you]<sub>F</sub> an idiot! (... the earth is not flat!)  
b. Aren't [you]<sub>F</sub> a genius! (... trying to charge your phone in the microwave!)

This contrasts with the negation-less, positive inversion exclamative *boy, are you a genius!*, which has a sincere interpretation. I currently do not have an explanation for this observation (see Taniguchi (in preparation)).

## 7. Conclusion

In this paper, I showed that negative inversion exclamatives (Neg-Ex's) are compatible with non-gradable predicates, and proposed that propositional extremity can be modeled in terms of

magnitudes of speaker commitment. Additionally, I advocated for an alternative-based semantics of exclamatives in order to address obligatory prosodic focus in the Neg-Ex construction. Compositionally, an alternative-sensitive operator turns the predicate into a question, of which it is asserted that the subject is an answer. At the expressive level, the exclamative intensifies this claim by setting the speaker's commitment to this answer to the maximal degree. This paper shows that language has various ways of encoding extraordinariness — seemingly an obvious property of exclamatives, but elusive as far as formalization concerns. The hope is that by examining this understudied construction, a better understanding of the sentential class “exclamatives” will be bought.

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### *Abbreviations*

F	focus
NEG-EX	negative inversion exclamative
NEG-Q	negative inversion question
EX-OP	exclamative operator
M-OP	measurement operator (Rett 2011)

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# Syntactic association with focus

## An agreement-based approach

Johannes Mursell

In this paper I argue for a syntactic analysis of association with focus based on agreement of focus features. I will show that agreement does not only take place between focus and an associated focus particle, but that additional elements in the left periphery are involved in the agreement process as well. The approach will then be used to derive restrictions on possible association patterns into islands and certain complement clauses, before the more general connection between information structural features and  $\phi$ -features, and its consequences, are discussed.

### 1. Introduction

The phenomenon of association with focus concerns the interaction of a so-called focus sensitive particle (FP) like *only* with the focused constituent. Focus, which is generally marked by intonation in English and German, has traditionally been analysed as a pragmatic phenomenon related to the way the information of an utterance is packaged (Chafe 1976), indicating the presence of alternatives to the element in focus (Rooth 1985; Krifka 2008). Thus, focussing different constituents of a sentence does not change its truth conditions, even though each example answers a different question under discussion, consequently being appropriate in a different context.<sup>1</sup>

- (1) a. [PEter]<sub>F</sub> gave Mary a kiss.  
b. Peter gave [MAry]<sub>F</sub> a kiss.  
c. Peter gave Mary [a KISS]<sub>F</sub>.  
true in all worlds in which Peter gave Mary a kiss

If, however, a focus sensitive particle like *only* is part of the sentence, different placements of

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<sup>1</sup>Capitalization in the examples marks the syllable on which the focus accent is placed, square brackets mark the focus domain.

the focus accent can change the truth conditions of the sentence (cf. Rooth 1985; Zimmermann & Onea 2011).

- (2) a. Peter gave **only** [MAry]<sub>F</sub> a kiss.  
       → true in all worlds in which Mary was the only one kissed by Peter  
     b. Peter gave Mary **only** [a KISS]<sub>F</sub>.  
       → true in all worlds in which the only thing Peter gave to Mary was a kiss

Importantly, the focus particle does not need to be adjacent to the focused constituent in English. Thus, the sentences in (3) have the same meaning as the sentences in (2).

- (3) a. Peter **only** gave [MAry]<sub>F</sub> a kiss.  
     b. Peter **only** gave Mary [a KISS]<sub>F</sub>.

The meaning of the focus sensitive particle does not only depend on the placement of the focus, but also on the size of the focus domain. Following Selkirk (1995:555), I assume that focus is able to project and focus marking in one position can lead to differently sized focus domains. The rules for focus projection are given in (4) and (5)<sup>2</sup>.

(4) **Basic Focus Rule**

An accented word is F-marked.

(5) **Focus Projection**

- a. F-marking of the head of a phrase licenses F-marking of the phrase.  
 b. F-marking of an internal argument of a head licenses the F-marking of the head.

Focus projection has consequences for association with focus since the meaning contribution does not depend on the (focus-)accented word but on the focus domain, shown in (6), where the continuation indicates the relevant set of alternatives.

- (6) a. John **only** gave Mary [a PREsent]<sub>F</sub>, and not a kiss.  
     b. John **only** [gave Mary a PREsent]<sub>F</sub>, and did not invite her for dinner.

The question how focus particle and focused constituent or focus domain are related has figured prominently in the research on information structure and has mostly been answered within a semantic approach. Consequently, I will start the discussion by outlining three semantic theories of association with focus before turning to previous syntactic analyses. This will be followed in section 4 by my own proposal which can be seen as an updated version of older syntactic accounts phrased in a minimalist framework based on agreement. In the section 5, certain consequences of an agreement-based approach will be discussed, with a particular focus on intervention effects and the syntactic role of information structural features in general.

## 2. *Semantic analyses of association with focus*

Many analyses of association with focus assume that the connection between focus particle and focus is established in the semantics without any syntactic reflex. Since the main approach to association with focus has been a semantic one, I will briefly present several semantic approaches

<sup>2</sup>However, see Büring (2006, 2016) for an extensive discussion of focus projection.

in this section. Due to the fact that the development of these different approaches was tied to discovering new data of association with focus, the discussion will also serve to introduce the various phenomena, with which any theory of association with focus has to deal.

### 2.1. Rooth (1985, 1992)

Rooth (1985, 1992) assumes that focus particle and focused constituent are connected only indirectly, via the alternatives introduced by the focus. Consequently, the author assumes every syntactic node comes with two different meanings, an ordinary semantic meaning  $\llbracket \alpha \rrbracket^o$  and a focus semantic meaning  $\llbracket \alpha \rrbracket^f$ . If an element is focused, the focus semantic meaning is a set of contextually restricted alternatives of the same semantic type. These alternatives are then inherited by the constituent containing the focused element, so that in the end, the syntactic sister of the focus particle has as the alternative semantic meaning a set of similar expressions only differing in the position of the focused element. In cases without focus, the alternative semantic value is simply a singleton set containing the ordinary semantic value.<sup>3</sup>

- (7) John **only** introduced  $[\text{BILL}]_F$  to Mary.
- (8) a.  $\llbracket [\text{Bill}]_F \rrbracket^o = \text{bill}$   
 b.  $\llbracket [\text{introduce}] \rrbracket^o = \text{introduce}$   
 c.  $\llbracket [\text{introduce } [\text{Bill}]_F] \rrbracket^o = [\text{introduce}(\text{bill})]$   
 d.  $\llbracket [\text{Mary}] \rrbracket^o = \text{mary}$   
 e.  $\llbracket [\text{introduce } [\text{Bill}]_F \text{ to Mary}] \rrbracket^o = [\text{introduce}(\text{bill})(\text{mary})]$
- (9) a.  $\llbracket [\text{Bill}]_F \rrbracket^f = \text{ALT}(\text{bill})$   
 b.  $\llbracket [\text{introduce}] \rrbracket^f = \{\text{introduce}\}$   
 c.  $\llbracket [\text{introduce } [\text{Bill}]_F] \rrbracket^f = \{[\text{introduce}(y)] \mid y \in \text{ALT}(\text{bill})\}$   
 d.  $\llbracket [\text{Mary}] \rrbracket^f = \{\text{mary}\}$   
 e.  $\llbracket [\text{introduce } [\text{Bill}]_F \text{ to Mary}] \rrbracket^f = \{[\text{introduce}(y)(\text{mary})] \mid y \in \text{ALT}(\text{bill})\}$

Adverbial *only* takes two arguments,  $\llbracket [\text{VP}] \rrbracket^o$  and  $\llbracket [\text{VP}] \rrbracket^f$ . Thus, it combines the ordinary semantic meaning of the VP with its focus semantic meaning, with the only difference being that the latter is a set of propositions that differ from the former with respect to the focused constituent. Adverbial *only* in (10) relates the two arguments in a way that states that the property expressed by the VP holds of x and that any other property out of the alternatives to the VP which holds of x is equal to the property expressed by the VP.

- (10) Adverbial *only*:  
 $\llbracket [\text{only } [\text{VP}]] \rrbracket = \lambda x [ \llbracket [\text{VP}] \rrbracket^o(x) \wedge \forall P \in \llbracket [\text{VP}] \rrbracket^f [P(x) \rightarrow P = \llbracket [\text{VP}] \rrbracket^o] ]$
- (11)  $\llbracket [\text{only introduce } [\text{BILL}]_F \text{ to Mary}] \rrbracket =$   
 $\lambda x [\text{introduce}(\text{bill})(\text{mary})(x) \wedge \forall P \in \{[\text{introduce}(y)(\text{mary})] \mid y \in \text{ALT}(\text{bill})\} [P(x) \rightarrow P =$   
 $[\text{introduce}(\text{bill})(\text{mary})]]$   
 ‘Bill was introduced to Mary and for all other alternatives to Bill of people being in-

<sup>3</sup>The example in (7), taken from Büring & Hartmann (2001), is a simplification of Rooth’s original idea. For him, the connection between focus particle and focus is even more indirect, mediated by the variable C, introduced by the squiggle operator  $\sim$  and adjoined to a projection containing the focus. This does not bear on the discussion, however.

roduced to Mary it holds that if someone was introduced to Mary, then it was Bill.<sup>4</sup>

Importantly, as (10) and (11) show, the focus particle *only* has indirect access to the alternatives of the focused constituents, namely via the alternatives of its syntactic complement. Thus, if the syntactic complement contains several foci, adverbial *only* is unable to distinguish between them, since it only operates on the focus semantic value of its whole complement. This specific property of Rooth's theory turns out to be problematic when further data, as discussed in the next subsection, are considered.

## 2.2. Kratzer (1991)

Kratzer discusses data like in (12), which show that an indirect connection between focus particle and associated focus via the alternatives of the complement of the focus particle is problematic.

- (12) A : What a copycat you are!  
           You went to Block Island because I did, and  
           you went to Tanglewood because I did.  
       B : No, I **only** went to TANGLEwood<sub>F</sub> because you did.  
       B' : I **only** went to TANGLEwood<sub>F</sub> because you went to TANGLEwood<sub>F</sub>.

The utterance B' in (12) with the ellipsis spelled out, shows that it contains two foci, one in each clause.<sup>4</sup> Following the theory of alternative semantics of Rooth outlined in the last section, the following alternatives to B' are predicted, since both foci are completely independent from each other and can thus vary independently.

- (13) a. I went to Block Island because you went to Block Island.  
       b. I went to Block Island because you went to Tanglewood.  
       c. I went to Tanglewood because you went to Block Island.  
       d. I went to Tanglewood because you went to Tanglewood.

However, (12) is interpreted only as involving (13a) and (13d) as alternatives, due to the interpretation of the elided material. Kratzer (1991) solves this problem by assuming that the focused constituents are replaced by distinguished variables which are then unselectively bound by the focus sensitive particle. By co-indexing the two foci in (12), they are replaced by the same variable at LF, which forces them to co-vary, generating the correct set of alternatives (13a) and (13d).

- (14) I **only** went to TANGLEwood<sub>F,1</sub> because you went to TANGLEwood<sub>F,1</sub>

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<sup>4</sup>This analysis is problematic in several ways. It is questionable, whether the elided part in B' does indeed contain a focus. In a theory like the one proposed by Schwarzschild (1999), sentence internal constituents would be able to serve as antecedents for deaccenting. Consequently, it would be expected that the main focus actually falls on *you* in the second clause since it is contrasted with an element in the first clause.

### 2.3. Wold (1996) and Reich (2004)

Wold (1996) and Reich (2004) discuss even more complex association patterns which go back to Krifka (1992) (second occurrence focus Féry & Ishihara 2009).

- (15) a. Dr. Svenson **only** told  $SUE_F$  about the proposal that Bill submitted.  
 b. Dr. Svenson **also only** told  $SUE_F$  about the proposal that  $JOHN_F$  submitted.

The authors claim that in (15b), *only* associates with *Sue*, while *also* associates with *John*, embedding one association with focus relation inside another. If this is indeed the correct characterization of the association pattern, it cannot be derived in a theory in which focus is unselectively bound by the closest c-commanding focus sensitive particle. This property of the approaches of Rooth (1985) and Kratzer (1991) is summarised in the following observation.

- (16) Each focus is bound by the lowest focus sensitive operator that c-commands it.  
 (Wold, 1996, ex. 15)

The generalization is based on the fact that the focus sensitive particle only indirectly accesses the focus and the alternatives it generates, namely via the alternatives that are inherited by the syntactic complement of the focus particle. To avoid this problem, and to correctly derive the association pattern in (15b), Wold (1996) argues, the focus sensitive particle needs direct access to the focused constituent, which is achieved by co-indexing focus particle and associated focus.

- (17) Dr. Svenson **also<sub>2</sub> only<sub>1</sub>** told  $SUE_{F,1}$  about the proposal that  $JOHN_{F,2}$  submitted.

Reich (2004) proposes a similar system, in which focus sensitive particle and focused element need to be co-indexed. In his system, however, foci introduce choice function variables that need to be bound by higher operators. To distinguish operators from foci, the two elements are assumed to carry different indices, the focus carrying a bound index  $\langle F_i, +p \rangle$  and the associated focus particle a binder index  $\langle F_i, -p \rangle$ , with  $\pm p$  indicating whether the element is phonologically interpreted as focus, i.e. hosting the main accent. Importantly, if no binder in the sense of a focus particle is present, the focus is bound by the speech act operator (e.g. ASSERT or INT) following Jacobs (1984), due to the fact that the choice function needs to be evaluated at some point. As will become clear in the discussion of my proposal in section 4, a direct connection between focus sensitive particle and its associate can easily be derived syntactically. Consequently, semantic approaches that assume such a direct connection are very close to such a syntactic account, with the most important difference being that in the syntactic account, this connection is achieved via AGREE and not via co-indexation.

### 2.4. Structured Meaning

An alternative approach to association with focus and the contribution of focus in general is the structured meaning approach (Klein & von Stechow 1982; von Stechow 1991; Krifka 1992). In this approach, it is assumed that the contribution of focus is to separate the clause into a background part and a focus part, so that the meaning is not a simple proposition, but a structured proposition, a tuple. The focus part corresponds to a variable in the background part, which is

bound by lambda abstraction. Thus, applying the background to the focus provides the ordinary semantic structure. Note however that, even though focussing different elements leads to different structured meanings, applying the background to the focus leads to the same meaning in all cases.

- (18) [PEter]<sub>F</sub> kisses Sue.  
 a. **focus:** peter  
 b. **background:**  $\lambda x[kiss(x, sue)](x)$   
 c. **structured meaning:**  $\langle \lambda x[kiss(x, sue)](x), peter \rangle$

In (18) as such, the partitioning into focus and background does not have any semantic effect. However, if a focus sensitive particle like *only*<sup>5</sup> is introduced, the partitioning has an effect, due to the semantics of the focus sensitive particle in (20). Thus, in cases of focus projection like (19) (compare (6)), different focus background structures lead to different truth conditions, as can be seen in (21).

- (19) John only introduced Bill to SUE<sub>F</sub>  
 a.  $only(\langle \lambda x.introduce[john, x, bill], sue \rangle)$   
 ‘The only person John introduced Bill to was Sue.’  
 b.  $only(\langle \lambda P.P[john], \lambda x.introduce[x, sue, bill] \rangle)$   
 ‘The only thing John did was introduce Bill to Sue.’  
 (20)  $only(\langle \alpha, \beta \rangle) = \alpha(\beta) \wedge \forall X[X \approx \beta \wedge \alpha(X) \rightarrow X = \beta]$   
 (21) a.  $introduce[john, sue, bill] \wedge \forall x[x \approx sue \wedge introduce[john, x, bill] \rightarrow x = sue]$   
 b.  $introduce[john, sue, bill] \wedge \forall P[P \approx \lambda x.introduce[x, sue, bill] \wedge P(john) \rightarrow P = \lambda x.introduce[x, sue, bill]]$

When (18) and (19) are compared, two kinds of foci can be distinguished. The focus in (19) that, due to its interaction with the focus sensitive particle by which it is bound, has an impact on the actual truth conditions. In (18) however, due to the lack of any interacting element, the focus seems to be without any effect. This observation has led to a fundamental distinction between these types of foci, the focus in (19) traditionally being called *bound focus*, while the one in (18) is referred to as *free focus*. The assumption that the focus in (18) is without any effect is of course misleading. Depending on the position of the focus, the utterance is appropriate in different contexts; it answers a different question under discussion. To encode this effect, Jacobs (1984) assumes that focus is always bound, and in cases in which no overt focus sensitive operator is present, it is the illocutionary type operator, or illocutionary force, binding the focus. A sentence like (22a) has the structured meaning (22b), in which ASS represents the illocutionary force ASSERT (Jacobs 1984:33).

- (22) a. [PEter]<sub>F</sub> besucht Gerdas Schwester.  
 Peter visits Gerda’s sister  
 ‘Peter visits Gerda’s sister.’  
 b.  $ASS(\langle \lambda x.x[visit(x, g.sister)], Peter \rangle)$

<sup>5</sup>‘ $\approx$ ’ in (20) means ‘comparable to’. In alternative semantics, this would correspond to being an element of the alternative set.

Similar to (21), what is claimed in (22b) is that the partitioning of the proposition into focus and background parts has an effect only due to the properties of the assertion (ASS) operator scoping over the background-focus structure. The effect this has can be seen in (23) (Krifka 1992:20). When an assertion is taken to be a modification of the common ground, it becomes obvious that its partitioning into focus and background does not affect the meaning proper of the ASS operator, since the whole proposition is added ( $\alpha(\beta)$ ). What it does affect, however, are the felicity conditions of the operator. This interaction with the felicity conditions accounts for the context dependency of the structured meanings: If a certain focus-background structure is uttered in an unsuitable context, answering a different question under discussion than the current one, the utterance is not wrong in the truth conditional sense but infelicitous.

- (23) ASSERT( $\langle\alpha, \beta\rangle$ ) maps a common ground  $c$  to a common ground  $c'$ , where  $c'$  is the intersection of  $c$  with the set of possible worlds for which  $\alpha(\beta)$  is true, i.e.  $c' = c \cap \alpha(\beta)$   
 Felicity conditions (among others):
- a.  $c' \neq c$  (asserting  $\alpha(\beta)$  makes a difference in CG)
  - b.  $c' \neq \emptyset$  (the truth of  $\alpha(\beta)$  must not be already excluded by  $c$ )
  - c. There are  $X$ , with  $X \approx \beta$  and  $X \neq \beta$ , such that  $\alpha(X)$  could have been asserted with respect to  $c$ . That is, it would have changed  $c$ ,  $c \cap [\alpha(X)] \neq c$ , it would not be excluded by  $c$ ,  $c \cap [\alpha(X)] \neq \emptyset$ , and would have yielded a different output context,  $c \cap [\alpha(X)] \neq c \cap [\alpha(\beta)]$ .

For Krifka (1992), this interaction takes place on a purely pragmatic level since the ASSERT operator is neither accessible in the syntax nor the semantics of the utterance. Similarly, Jacobs (1984) delegates this interaction to the level of illocutionary semantics. If, however, illocutionary force is taken to be encoded in the syntax, in the form of a functional head in the high extended left periphery, then modification of this head inside the syntax becomes possible. In this, I follow Rizzi (1997) in the assumption that the illocutionary force is hosted in the highest projection of the clause.<sup>6</sup>

Since focus, or more specifically, the focus-background structure of the clause, plays an important role in determining the felicity of a certain utterance, I assume that the illocutionary force is connected to the focused constituent via an agreement relation based on focus features. Due to that relation, different placements of the focus lead to different contexts in which an assertion is appropriate. Additionally, as we will see in the next section, the structured meaning approach towards association with focus is actually very close to the traditional syntactic approach to association with focus which is based on LF movement. In these syntactic approaches, it is assumed that the focus moves covertly into a position directly adjacent to the focus sensitive particle, leaving behind an A'-bound trace, effectively creating a configuration very similar to (18). Thus, I believe that the structured meaning account of association with focus will be able to provide the semantic interpretation of association with focus based on the syntactic approach presented in section 4.

<sup>6</sup>This is a simplification. Rizzi assumes that the highest projection in the extended left periphery actually hosts clause type features like DECL or INT. However, there is a growing amount of evidence for the assumption that illocutionary force proper is also encoded as one or even several heads in the left periphery, see Coniglio & Zegrean (2012) and Heim et al. (2014) for discussion. In this paper I will simply equate Rizzi's Force head with illocutionary force.

## 2.5. Summary

In this section, I have discussed semantic approaches to association with focus, which provide the majority of accounts to the phenomenon found in the literature. I have shown that to derive all patterns of association with focus correctly, foci need to be co-indexed with their associated focus particles.

## 3. Syntactic analyses of association with focus

In this section, the syntactic approach to association with focus of Chomsky (1976) will be discussed, including its later modification by Drubig (1994). The syntactic analysis claims that association with focus involves LF movement of the focused constituent into a position adjacent to the focus particle which produces an LF structure very close to the one assumed in the structured meaning approach in (23).

- (24) a. SS: [<sub>VP</sub> **only** [<sub>VP</sub> introduced [BILL]<sub>F</sub> to Sue ] ]  
 b. LF: [<sub>VP</sub> **only** [<sub>VP</sub> Bill<sub>1</sub> λ<sub>t<sub>1</sub></sub> [<sub>VP</sub> introduced t<sub>1</sub> to Sue ] ] ]

Evidence for this analysis comes from weak cross-over effects (WCO), a typical property of A'-movement, shown with wh-movement in (25). In (26a), *his* and *John* can be interpreted as referring to the same individual. However, as soon as *John* is focused, the co-referential reading becomes unavailable. Chomsky claims that this is due to movement of *John* across the pronoun into a position adjacent to the focus particle, which produces the typical WCO configuration (26c).

- (25) ?\*[Which student]<sub>1</sub> does his<sub>1</sub> professor dislike t<sub>1</sub>?  
 (26) a. I claimed that his<sub>1</sub> friends like John<sub>1</sub>.  
 b. \*?I **only** claimed that his<sub>1</sub> friends like JOHN<sub>F,1</sub>.  
 c. LF: I **only** [John<sub>1</sub> λ<sub>t<sub>1</sub></sub> [claimed his<sub>1</sub> friends like t<sub>1</sub>]]

One problem for the LF-movement account of association with focus was pointed out by Jackendoff (1972) and Anderson (1972), namely that association with focus is not restricted by islands. Since covert movement is supposed to be subject to the same restrictions as overt movement (Longobardi 1991), this is unexpected.

- (27) a. Peter **only** talked to the man who had mentioned [SUE]<sub>F</sub>.  
 b. The police **only** arrested the man with the [RED]<sub>F</sub> hat.

This problem led to a shift from syntactic to semantic theories of association with focus, the alternative semantics theory of Rooth (1985) being a direct consequence of it. A different route was taken by Drubig (1994), who, in order to account for the data in (27), claimed that when the focus is contained inside an island, it is actually the whole island that moves covertly, not just the focused constituent. Evidence for this assumption comes from two observations. First, in languages that overtly move foci, like Hungarian, the whole island containing the focus is moved (Drubig 1994:6).

- (28) a. He **only** invited [ex-convicts with RED<sub>F</sub> shirts].

- b. Ö [czak [PIROS]<sub>F</sub> inges volt foglyokat]<sub>i</sub> hivolt meg t<sub>i</sub>.  
 he only red.shirt with former convicts invited.he PERF  
 ‘He only invited ex-convicts with red shirts.’

Second, in wh-in-situ languages like Japanese in (29), when the wh-element is part of an island, the answer must at least contain the whole island (Drubig 1994:8).

- (29) Q: Mary-wa [[John-ni nani-o ageta] hito-ni] atta-no?  
 Mary-TOP John-DAT what-ACC gave men-DAT met-Q  
 ‘What<sub>i</sub> did Mary meet [the man [who gave to John t<sub>i</sub>]]?’  
 A: \*Konpyunta desu.  
 computer it.is  
 ‘(It is) a computer.’  
 A’: [Konpyunta-o ageta] hito desu.  
 computer-ACC gave men it.is  
 ‘(It is) the man (who) gave a computer.’

That islands seem to restrict association with focus is also visible in English in that island boundaries restrict possible long distance association patterns. Thus, as discussed in section 1, in (30), both examples have a similar meaning.

- (30) a. Paul **only** gave Mary [a KISS]<sub>F</sub>.  
 b. Paul gave Mary **only** [a KISS]<sub>F</sub>.

When an island boundary intervenes between focus sensitive particle and focused constituent, long distance association becomes impossible, leading to meaning differences. Thus, in (31a) *only* necessarily associates with the whole island, leading to the interpretation that *the man who mentioned Sue* is the only person Peter talked to. In contrast, (31b), in which *only* narrowly associates with *Sue*, is interpreted in a way that the man Peter talked to mentioned only one person, and that was Sue. This contrasts with (30), in which both examples can have the meaning related to narrow association with the direct object, namely that the only thing that Paul gave to Mary was a kiss.

- (31) a. Peter **only** talked to [the man who mentioned SUE]<sub>F</sub>.  
 b. Peter talked to the man who mentioned **only** [SUE]<sub>F</sub>.

Importantly, not only island boundaries seem to restrict possible association patterns. Certain complement clauses that do allow extraction restrict possible association patterns as well.

- (32) Q: Who<sub>i</sub> does Mary know that John visited t<sub>i</sub>.  
 A: Mary **only** knows that [John visited SUE]<sub>F</sub>.  
 A’:??Mary **only** knows that John visited [SUE]<sub>F</sub>.

Deriving syntactic restrictions on possible association patterns appears to be difficult in a purely semantic approach to association with focus. In the next section, I will present a syntactic analysis of association with focus based on agreement which is able to account for the patterns and restrictions discussed in the last section.

#### 4. Agreement-based association with focus

In this section, I will develop a syntactic approach to association with focus which is based on agreement. Before turning to the proposal, however, I will introduce two underlying theoretical assumptions which the proposal to be developed later relies on. First, the slightly modified agreement system of Pesetsky & Torrego (2007) will be discussed, since the system to be proposed requires more flexibility with respect to the feature configurations than the one provided by Chomsky (2000, 2001). Second, I will briefly discuss the relation between illocutionary force, hosted in the highest head of the left periphery, and focus. This discussion will be followed by the actual proposal while the third part of the section will then apply the theory to the data discussed in the semantic approaches and it will be shown that under the agreement based approach, it is possible to account for most of the data.

From a conceptual point of view, an agreement based syntactic account of association with focus is motivated by two considerations. First, following the Inclusiveness Condition in (33), no indices should be introduced in the narrow syntax.<sup>7</sup>

- (33) **Inclusiveness Condition** (Chomsky 1995:228)  
 ‘A perfect language should meet the condition of inclusiveness: [...] no new objects are added in the course of the computation apart from rearrangement of lexical properties (in particular, no indices, bar levels in the sense of X’-theory, etc. [...])’

Second, since AGREE (Chomsky 2000, 2001) is a necessary part of the computational system, covert movement is unnecessary. One task of a syntactic approach to association with focus is therefore to define an agreement system which is suitable to replace the LF movement accounts of Chomsky (1976) and Drubig (1994).

##### 4.1. Multiple AGREE

In this section, I briefly introduce the agreement system of Pesetsky & Torrego (2007) to provide the necessary syntactic background. The authors replace the definition of AGREE from Chomsky (2000, 2001) with the one in (34).

- (34) **Agree** (Feature sharing version)
- a. An unvalued feature  $F$  (a probe) on a head  $H$  at syntactic location  $\alpha$  ( $F_\alpha$ ) scans its c-command domain for another instance of  $F$  (a goal) at location  $\beta$  ( $F_\beta$ ) with which to agree.
  - b. Replace  $F_\alpha$  with  $F_\beta$ , so that the same feature is present in both locations.

In this system, valuation and interpretability are dissociated and all four feature combinations of are possible, shown in Table 1, with the ones not possible in other agreement approaches marked in bold. The only requirement for a probe to be active being to have an unvalued feature.

Importantly, features can take part in several agreement relations so that feature chains can be established between several features.

<sup>7</sup>For attempts to get rid of indices in other parts of the theory, see Hicks (2009) and Reuland (2011) for Binding without indices and Hornstein (1999) et seq. for Control without indices.

	valued	unvalued
interpretable	iF:val [ ]	<b>iF</b> [ ]
uninterpretable	<b>uF:val</b> [ ]	uF [ ]

Table 1: Feature combinations according to Pesetsky & Torrego (2007)

(35)  $iF_{\alpha}[] \dots uF_{\beta}[3] \dots uF_{\gamma}[3]:val$

(36)  $iF_{\alpha}[3] \dots uF_{\beta}[3] \dots uF_{\gamma}[3]:val$

In a first step, shown in (35), an unvalued feature  $uF_{\beta}[3]$  can agree with a feature in its c-command domain, indicated by the shared integer between square brackets. In a second step (36), the feature on  $uF_{\beta}[3]$  can itself become the goal of a higher probe, so that three features form an agreement chain. As already indicated in the definition in (34), agreement means that the same feature is shared between several instances in the feature chain, the feature is consequently present in each position that participates in the agreement relation. To restrict the system and ensure successful derivations, the authors rely on the following requirement on feature chains.

(37) **Thesis of Radical Interpretability** (Brody 1997)

Each feature must receive a semantic interpretation in some syntactic location.

(37) requires every feature chain, even if it is only composed of two instances of the feature, to contain at least one interpretable instance, leaving open the possibility that more than one instance of the feature is actually interpretable.

#### 4.2. Agreement based association with focus

In this subsection, I outline my approach to association with focus based on syntactic agreement of focus features. I assume that all elements that participate in the agreement process on which association with focus is based do so due to unvalued focus features. The feature configurations of the respective elements are given in (38).

(38) **Feature configurations**<sup>8</sup>

- a. Focussed XP: [uFoc[]:val]
- b. FP:[iFoc[]: □ ]
- c. Foc: [iFoc[]: □ ]
- d. Force: [iFoc[]: □ ]

I assume that the focused element carries a valued but uninterpretable focus feature [*uFoc:val*]. This focus feature is part of narrow syntax (*pace* Fanselow & Lenertová 2011; López 2009, following Jackendoff 1972 and others) and most likely assigned to an element in the numeration (Breul 2004; Aboh 2010). Furthermore, this feature is able to project (Selkirk 1995) so that certain feature placements can lead to ambiguities. Even though assuming that the the focus feature on the focused element is uninterpretable despite being in the position in which focus

<sup>8</sup>□ indicates that the feature is initially unvalued.

is marked, might seem counterintuitive, it follows from its actual contribution. As discussed in section 2.4., focussing different elements in the same sentence does not change its truth conditions so that the focus feature as such does not seem to have any semantic impact, leading to the assumption that it is uninterpretable. Phonologically, on the other hand, the feature does have an impact, since, at least in languages like English or German, it leads to a specific accent pattern (compare also the discussion of Reich 2004 in section 2.3.).

For the focus feature of the focus sensitive particle, I assume that it is an unvalued but interpretable instance of the focus feature, [iFoc[]: □]. Being unvalued makes the feature active as a probe and being interpretable indicates that it has truth conditional impact.<sup>9</sup> In addition to the focus features of the focused constituent and the focus sensitive particle, two more features are involved in the agreement process, the focus feature of the *Foc* head in the left periphery, following Rizzi (1997), and a focus feature on the highest element in the extended left periphery, the *Force* head. The focus feature of the head of the FocP in the left periphery marks the position to which focus is moved in languages that use displacement for focus marking, the focus feature of the illocutionary force reflects the idea of Jacobs (1984) that apparently free focus, focus without accompanying focus sensitive particle, is actually bound by the illocutionary type operator (cf. Reich 2004 and Krifka 1992 for the semantics as well as the discussion in 2.4.). Taken together, a derivation containing association with focus runs as follows.

The focused DP is merged in its base position inside the *vP*, carrying a valued but uninterpretable focus feature. After the *vP* is built, the focus sensitive particle is merged as an adjunct to the *vP* and, due to carrying an unvalued interpretable focus feature, probes in its c-command domain for a valued instance of the focus feature and agrees with the focus feature on the focused element.<sup>10</sup>

(39) FP<sub>[iFoc[1]]</sub> ... XP<sub>[uFoc[1]:val]</sub>

After the focus particle has been merged and agreement has taken place, the derivation proceeds, until at some point the *Foc* head in the left periphery is merged. It also carries an unvalued interpretable focus feature and thus acts as a probe, entering an agreement relation with the focus feature that is already shared between focused constituent and focus sensitive particle, and thus creates a feature chain.

(40) Foc<sub>[iFoc[1]]</sub> ... FP<sub>[iFoc[1]]</sub> ... XP<sub>[uFoc[1]:val]</sub>

Lastly, the *Force* head is merged as the highest head in the left periphery, also carrying an interpretable but unvalued focus feature, which consequently probes for and agrees with the highest focus feature in its c-command domain. This agreement then leads to a feature chain in which the same feature is shared over four instances, the focused DP, the focus sensitive particle, *Foc*, and *Force*, with the value being provided by the uninterpretable instance of the feature.

<sup>9</sup>I mostly focus on *only* here, but note that other focus sensitive particles have been claimed not to affect the truth conditions, for example *also*. I leave open here the discussion of how that would affect the possible feature combinations and assume for now that *also* carries an [iFoc[]: □] as well. Further investigations in this direction might provide an account of the restrictions on the combination of focus particles (see also the discussion in Beaver & Clark 2008).

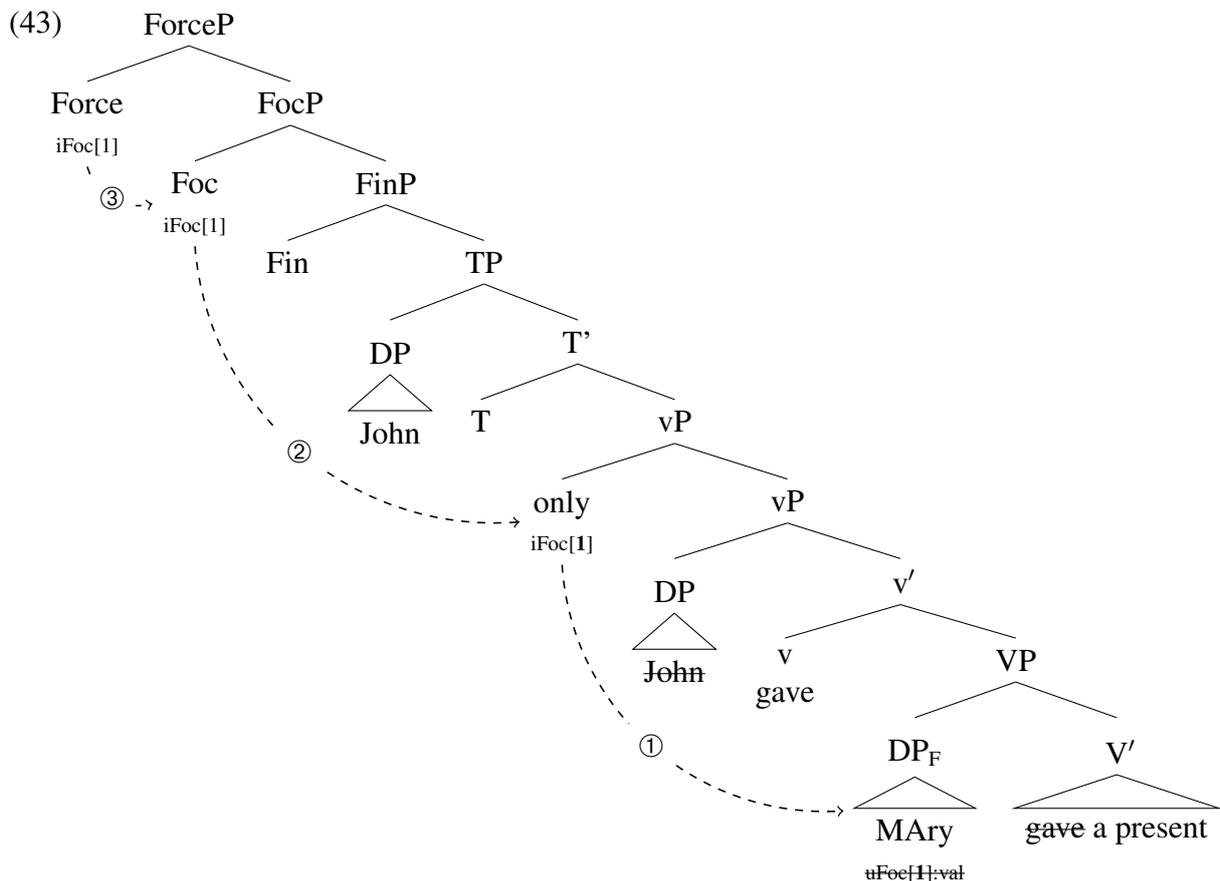
<sup>10</sup>Thus, the focus sensitive particle takes two arguments, its syntactic complement and the focused constituent, following the structured meaning approach to focus.

(41)  $\text{Force}_{[i\text{Foc}[1]]} \dots \text{Foc}_{[i\text{Foc}[1]]} \dots \text{FP}_{[i\text{Foc}[1]:]} \dots \text{XP}_{[u\text{Foc}[1]:\text{val}]}$

For concreteness sake, consider the derivation of the sentence in (42), represented in (43), with the agreement processes indicated in the order in which they take place.

(42) John only gave [MAry]<sub>F</sub> a present.

Even though the derivation in (43) seems to involve rather complex agreement patterns to derive the syntactic account of association with focus, each agreement process can be justified individually. As discussed in section 3, agreement between the focus sensitive particle and the focused constituent is responsible for weak crossover effects. Agreement between focus sensitive particle and the *Foc* head seems to cause WCO, as will be shown section 5.1., and could consequently be analysed as an A'-dependency. Additionally, agreement between focus particle and *Foc*, as well as *Foc* and *Force* can serve as an explanation for the restricted association patterns and are necessary for focus movement and for the bound focus theory of Jacobs (1984), respectively.



#### 4.3. Accounting for the patterns

Under this approach, all the simple association patterns can be derived, independently from the focus particle being directly adjacent to the focused constituent or not, since AGREE does

not require adjacency. In addition, cases involving focus projection are equally unproblematic, since probing and subsequent agreement always target the highest accessible feature in the c-command domain of the probe. However, the complex association patterns discussed by Wold (1996) and the data concerning association into islands and complement clauses warrant further discussion.

#### 4.3.1. Multiple association patterns

As mentioned in section 2.3, Wold (1996), based on Krifka (1992), discusses complex association patterns in which one association relation seems to be embedded in another one.

- (44) a. Dr. Svenson **only** told SUE<sub>F,1</sub> about the proposal that Bill submitted.  
 b. Dr. Svenson **also**<sub>2</sub> **only**<sub>1</sub> told SUE<sub>F,1</sub> about the proposal that JOHN<sub>F,2</sub> submitted.  
 c. \*Dr. Svenson **also**<sub>1</sub> **only**<sub>2</sub> told SUE<sub>F,1</sub> about the proposal that JOHN<sub>F,2</sub> submitted.

An important restriction on these complex patterns is that crossing dependencies are not permitted, just as in general for A' dependencies (Pesetsky 1982). The patterns in (44) are not unproblematic to derive in a syntactic approach, however, since the probing focus feature on *also* is expected to target the closest focus feature in its c-command domain, which is provided by *only*. Nevertheless, the patterns reported by Wold (1996) are not the common association patterns reported by native speakers confronted with the data. In the most common association pattern in (45), *only* first associates with both foci in its c-command domain before *also* then agrees with the highest focus feature in its c-command domain, the iFoc of *only*, taking its whole complement as associated focus.

- (45) a. **only**<sub>iFoc[1]</sub> told [MAry]<sub>uFoc[1]:val</sub> about the proposal that BILL<sub>uFoc[1]:val</sub> submitted  
 b. Dr Svenson **also**<sub>iFoc[1]</sub> **only**<sub>iFoc[1]</sub> told [MAry]<sub>uFoc[1]:val</sub> about the proposal that BILL<sub>uFoc[1]:val</sub> submitted.

The higher focus sensitive particle agrees with the highest accessible focus feature in its c-command domain, the one provided by *only*. Even though assuming one focus sensitive particle, *only* in (45), to be able to associate with multiple foci appears to be an uncommon assumption, agreement of one element with multiple foci is necessary anyway. Recall that apparently free foci are connected to the *Force* head via agreement with the *Foc* head in the left periphery. Since a sentence can contain multiple foci, the *Foc* head needs to be able to agree with several focus features in general.<sup>11</sup> In addition, it was already observed in Krifka (1992) that one focus particle can associate with multiple foci (46), and furthermore, it can easily be shown that one focus particle can serve as an agreement goal for a higher one (47).

- (46) John **only**<sub>iFoc[1]</sub> introduced [BILL]<sub>uFoc[1]:val</sub> to [Sue]<sub>uFoc[1]:val</sub>.  
 'The only two people John introduced to each other were Bill and Sue.'  
 (47) John **also**<sub>iFoc[1]</sub> **only**<sub>iFoc[1]</sub> mentioned [BILL]<sub>uFoc[1]:val</sub>.  
 (Uttered in a context in which somebody else only talked about Bill.)

<sup>11</sup>Something very similar needs to be claimed for multiple wh-questions.

4.3.2. *Restrictions on long distance association patterns*

Association with focus is restricted by islands in the sense that, when the focus is contained inside an island, the whole island associates with the focus particle (Drubig 1994), as discussed in section 3.

- (48) a. \*Peter **only** talked to the man who had mentioned [SUE]<sub>F</sub>.  
 b. Peter **only** talked to [the man who had mentioned SUE]<sub>F</sub>.
- (49) a. \*John **only** wonders who gave Mary [the PREsent]<sub>F</sub>.  
 b. John **only** wonders [who gave Mary the PREsent]<sub>F</sub>.

A similar restriction seems to hold for certain complement clauses, since they show an asymmetry with respect to association with focus: While association is possible into most finite and non-finite complement clauses, it is at least degraded into factive finite and non-finite clauses. The judgments represented in this section have only been tested with a low number of native speakers, which makes further more thorough investigations necessary. VP- and TP-sized non-finite clauses (Wurmbrand 2001) allow long distance association from the outside.

- (50) a. John **only** tried to eat [CAKE]<sub>F</sub>.  
 b. John **only** tried [to eat CAKE]<sub>F</sub>.
- (51) a. Frank **only** decided to eat [CAKE]<sub>F</sub>.  
 b. Frank **only** decided [to eat CAKE]<sub>F</sub>.

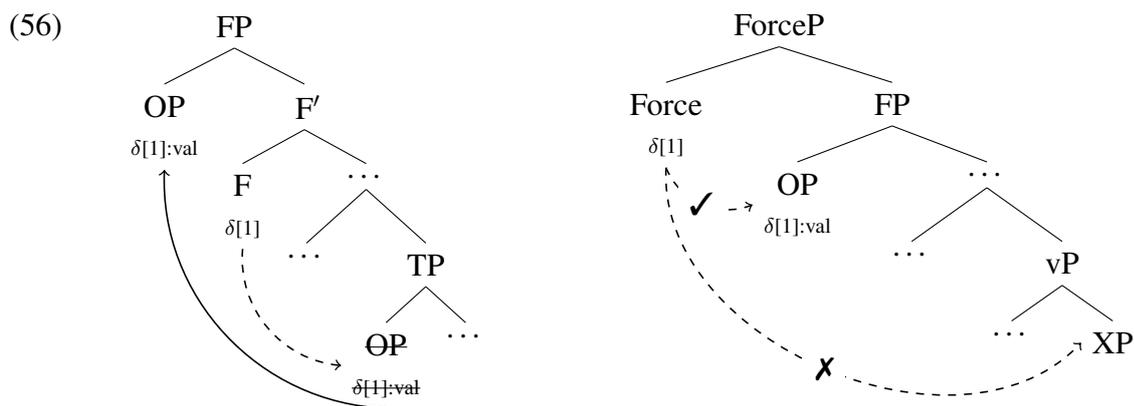
CP-sized factive non-finite complements (52) do not allow long distance association into the clause, while non-factive non-finite CP-sized clauses allow it (53).

- (52) a. ??Peter **only** regretted to have eaten [the CAKE]<sub>F</sub>.  
 b. Peter **only** regretted [to have eaten the CAKE]<sub>F</sub>.
- (53) a. Mary **only** claimed to have stolen [the CAKE]<sub>F</sub>.  
 b. Mary **only** claimed [to have stolen [the CAKE]<sub>F</sub>.

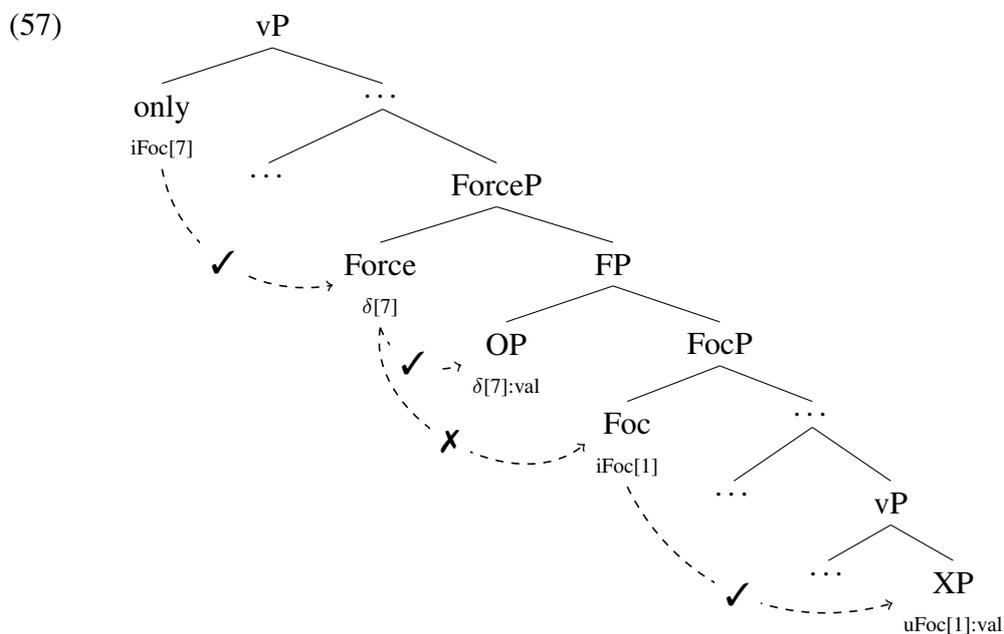
Finite complement clauses show the same asymmetry, long distance association is only possible with non-factive complement clauses (54), but not with factive complement clauses (55).

- (54) a. Frank **only** believes that Arsenal will beat [CHELsea]<sub>F</sub>.  
 b. Frank **only** believes [that Arsenal will beat CHELsea]<sub>F</sub>.  
 c. I **only** said that Peter gave Mary [a GIFT]<sub>F</sub>.  
 d. I **only** said [that Peter gave Mary a GIFT]<sub>F</sub>.
- (55) a. ??I **only** regret that Peter gave a gift to [MAry]<sub>F</sub>.  
 b. I **only** regret [that Peter gave a gift to MAry]<sub>F</sub>.  
 c. ??I was **only** surprised that Chris finished [his ESSay]<sub>F</sub> (but not his term paper).  
 d. I was **only** surprised [that Chris finished his ESSay]<sub>F</sub> (but not that he finished his term paper).

Another way of characterizing the class of complement clauses that allow long distance association is in terms of root clauses: Only those complement clauses that allow main clause phenomena (MCP) allow long distance association into them (Emonds 1970; Hooper & Thompson



1973; Heycock 2005). Thus, an analysis of Main Clause Phenomena might also provide an explanation of the restrictions of association into non-root clauses. I claim that the operator movement account of Haegeman & Ürögdi (2010) and Haegeman (2012) provides this explanation straightforwardly. The authors claim that, similar to other clauses that cannot host MCP (conditionals, temporal clauses, central adverbial clauses), factive complement clauses contain an operator in the TP area which moves to the left periphery and thus makes other processes targeting clause internal material impossible due to intervention (Haegeman & Ürögdi 2010:115). This operator hosts discourse ( $\delta$ ) features, is merged in the TP area, and moves to a position above the *Foc* head but below the *Force* head.



Due to the operator hosting  $\delta$ -features, which at least consist of topic and focus features, the operator provides a closer goal for the probing illocutionary force, thus making a connection between illocutionary force and the focus contained in the clause impossible (57). For long distance association, the operator causes the illocutionary force of the clause to be unconnected

to the focused constituent. Consequently, the higher focus sensitive particle in the matrix clause can only agree with the focus feature of the illocutionary force of the embedded clauses, which is necessarily distinct from the focus feature of the focused constituent due to the intervening operator.

This analysis of restrictions on association with focus into complement clauses makes two easily testable predictions. First, in languages in which focus is marked syntactically by movement, this movement should still take place in factive complement clauses, even though association into the complement clause remains blocked from the outside. This is due to the fact that the *Foc* head, the target for the moved constituent, is below the moved operator and thus available for agreement with the focused constituent and subsequent movement into its specifier. Hungarian factive complement clauses show the expected behaviour: The focused constituent moves into preverbal position inside the complement clause but only the whole complement clause can serve as an associate for a higher focus particle (the negation in (58), from Drubig 1994:46, ex. 75).

- (58) Nem tudja hogy [ a FELESÉGÉT ] meghívtak hanem.  
 not knows.he that the wife.his invited.they but  
 'He doesn't know that they invited [his WIFE]<sub>F</sub> but ...'  
 a. \*(hogy) JANET.  
     that Jane-ACC  
     ... Jane.'  
 b. hogy JANET szereti.  
     that Jane-ACC loves-he  
     ... that he loves Jane.'

Second, all other elements that are connected to the illocutionary force of the clause via information structural features should also be banned from occurring in non-root contexts, due to the intervening operator. In Egg & Mursell (2014) it is argued that discourse particles (DiPs) in German are closely connected with information structure (cf. Grosz 2015). However, in contrast to focus sensitive particles, they depend on illocutionary force for correct interpretation, since they modify it. As has been extensively argued by Coniglio (2008), DiPs are restricted to root clauses and are thus a main clause phenomenon, just as predicted by the theory presented in this paper.<sup>12</sup> Thus, as shown in the German examples in (59), DiPs are banned, for example, from most factive complement clauses (59a), most locative adverbial clauses (59b), and restrictive relative clauses (59c) (note the non-restrictive reading forced by the DiP). For an extensive discussion of this pattern see Coniglio (2007).

<sup>12</sup>It needs to be pointed out that sometimes, discourse particles seem to appear in non-root clauses.

- (i) a. Franziska ist eingefallen, dass Klaus **ja** allergisch auf Nüsse ist.  
 Franziska is remembered that Klaus **JA** allergic on nuts is  
 'Franziska remembered that Klaus is allergic to nuts (and that's old information).'  
 b. Wie denkst du, dass es **denn** weitergehen soll mit euch?  
 how think you that it **DENN** go-on should with you  
 'How do you think that the two of you should carry on? (I'm wondering)'

Importantly, the DiPs in (i) are not interpreted inside the embedded clause but as modifying the illocutionary force of the matrix clause. How it is possible for the DiP to take scope outside of the embedded clause needs to be left open for further research.

- (59) a. \*Er leugnete, das letzte Stück Kuchen **ja** gegessen zu haben.  
 he denied the last piece cake JA eaten to have  
 int.: ‘He denied to have eaten the last piece of cake, as is already known.’
- b. \*Wo sie **ja** arbeitet, scheint immer die Sonne.  
 where she JA works shines always the sun  
 int.: ‘Where she works, the sun always shines, as is already known.’
- c. Die Dänen, die **ja** gerne Fußball gucken, trinken viel Bier.  
 the danish who JA gladly football watch drink a.lot.of beer  
 ‘The Danish, who (as it is known) like to watch football, drink a lot of beer.’

## 5. Consequences

In this section, I discuss some of the consequences and predictions of the syntactic account of association with focus. Briefly discussing the distribution of crossover effects first, I will then turn to intervention effects, which are treated as Relativized Minimality effects, before focussing on the interplay of information structural features with  $\phi$ -features more extensively in the final part.

### 5.1. Crossover effects

Association with focus is analysed as an A'-dependency between the focus sensitive particle and the focused constituent, as well as between the focus sensitive particle and the *Foc* head in the left periphery. Consequently, crossover effects are not just expected between the focus sensitive particle and focused constituent ((60), (26b) from section 3), but also above the focus sensitive particle, (61).

- (60) a. I claimed that his<sub>1</sub> friends like John<sub>i</sub>.  
 b. \*I **only** claimed that his<sub>1</sub> friends like JOHN<sub>F,1</sub>.  
 c. LF: I **only** [John<sub>1</sub>  $\lambda$ t<sub>1</sub> [claimed his<sub>1</sub> friends like t<sub>1</sub>]]
- (61) a. I claimed that his<sub>1</sub> friends told John<sub>1</sub> about the party.  
 b. \*I claimed that his<sub>1</sub> friends **only** told [JOHN]<sub>F,1</sub> about the party.

In (60), the weak crossover effect discussed in Chomsky (1976) is shown. Since the associated focus is moved across the co-indexed pronoun, the pronoun is difficult to be interpreted as coreferent to the moved R-expression. If WCO effects are now taken as a diagnostic for A' dependencies, something comparable is expected to hold between the left peripheral *Foc* head and the focus particle. This WCO effect is shown in (61).

### 5.2. Intervention effects

In general, intervention effects occur when quantificational or focusing elements intervene between a *wh*-phrase and its licensing complementizer, resulting in ungrammaticality (Beck 2006). This is a rather widespread phenomenon, most visible in *wh*-in-situ languages. In German, intervention configurations require multiple *wh*-questions and are only present if the low

wh-element is not interpreted as an indefinite.

(62) \*[Q<sub>i</sub> [ ... [ intervener XP<sub>F</sub> [ ... wh-phrase<sub>i</sub> ... ] ] ] ]

(63) \*Wem hat **nur** [PEter]<sub>F</sub> was gegeben?  
 whom has only Peter what given  
 int: ‘Whom did only Peter give what?’

Beck’s account for intervention effects is exclusively based on the semantics of the intervener. It is the binding of the variable introduced by the wh-element by an operator which is not *Q* that causes ungrammaticality due to the semantics of the operator. Scrambling the low wh-element above the intervener allows for a multiple question interpretation, while interpreting the low wh-element as an indefinite can also rescue the sentence.

(64) Wem hat was **nur** [PEter]<sub>F</sub> gegeben?  
 whom has what only Peter given  
 ‘Whom did Peter only give what?’

(65) Wem hat **nur** [PEter]<sub>F</sub> was gegeben?  
 whom has only Peter what given  
 ‘Whom did only Peter give something?’

Following Li & Cheung (2015), I assume that the cause for the intervention effect in (63) is not due to the semantics of the intervener but due to the different agreement processes involved in the derivation. Under the assumption that one part of the relation between the *Q* operator in the left periphery and the wh-element is an agreement relation based on focus features (Breul 2004; Haida 2007), the intervention effect can be analysed as a Relativized Minimality effect (Rizzi 1990; Starke 2001). The intervening focus sensitive particle provides an appropriate goal for the probing *Q*-operator, a focus feature that is closer to *Q* than the focus feature of the wh-element and consequently blocks agreement between the *Q*-operator and the low wh-element. Note that when the low wh-element is scrambled above the intervener, i.e. providing a closer goal, the intervention effect is absent. In addition, the interpretation of the low wh-element as an indefinite could be taken to indicate the absence of an alternatives inducing focus feature, which thus does not require any kind of agreement, leading to a successful derivation.

An alternative proposal is offered by Li & Law (2016), who claim that intervention effects are not due to the focus alternatives of the wh-element but due to the ordinary alternatives of the wh-element, which are alternatives in the ordinary semantic meaning, in combination with the focus alternatives of an intervening additional focused DP. This combination creates a structure with alternatives in both dimensions which in turn cannot be combined with a focus sensitive particle like *only*. They base their claim on two observations: first, focus intervention requires the structure in (66) in which a focus sensitive particle together with its associated focus intervenes between *Q* operator and wh-element<sup>13</sup>, and second, it is possible for focus sensitive particles to associate with wh-elements without causing intervention effects (67).

(66) ?\*[Q ... focus-sensitive operator [ XP<sub>F</sub> ... WH ... ] ] (Li & Law 2016:208)

<sup>13</sup>It is worth noting that this is already pointed out in Beck (2006:11) who, referring back to Kim (2002), explicitly states that “[a] focused phrase (e.g. ‘only’+NP) may not intervene between wh-phrase and its licensing complementizer.”

- (67) Libai **zhi** chuxi-le shenme huodong?  
 Libai only attend-ASP what activity  
 ‘What was the activity x such that Libai only attended x?’ (zho, Li & Law 2016:205)

Both observations are predicted in the agreement account of intervention effects. Since wh-elements also carry a focus feature, they provide a suitable agreement goal for the probing focus sensitive particle so that, without any intervening focused XP, the situation in (67) arises. Thus, as pointed out by Beck (2006) and Li & Law (2016), an intervening focused XP is a necessary part of an intervention effect configuration.

Importantly, in addition to focus sensitive particles and certain quantificational elements, discourse particles show intervention effects as well (68), again only if the low wh-element is not interpreted as an indefinite. The observation that the sentence can be rescued by scrambling the wh-element across the intervener shows that the ungrammaticality is indeed due to an intervention effect (69).

- (68) Wann hat Peter was mitgebracht? (ger)  
 a. \*Wann hat **nur** [PEter]<sub>F</sub> was mitgebracht?  
 b. \*Wann hat **wohl** [PEter]<sub>F</sub> was mitgebracht?  
 c. \*Wann hat **doch** [PEter]<sub>F</sub> was mitgebracht?  
 when has PRT Peter what brought  
 int.: ‘When did Peter bring what?’
- (69) Wann hat Peter was mitgebracht? (ger)  
 a. Wann hat was **nur** [PEter]<sub>F</sub> mitgebracht?  
 b. Wann hat was **wohl** [PEter]<sub>F</sub> mitgebracht?  
 c. Wann hat was **doch** [PEter]<sub>F</sub> mitgebracht?  
 when has what PRT Peter brought  
 ‘When did Peter bring what?’

Under the approach of Beck (2006), intervention effects are caused by the semantics of the intervener. Discourse particles, however, are argued not to have any truth-conditional effect on their host utterance (Zimmermann 2004), which makes the ungrammaticality in (68) unexpected. The Relativized Minimality account of intervention effects readily provides an explanation. Since discourse particles also interact with focus via agreement, they, similarly to focus sensitive particles, provide a closer agreement goal for the Q-operator in the left periphery than the low wh-element.

In general, the agreement approach predicts a close relation between wh-elements and focus and also suggests an explanation for certain island effects in terms of information structural features. A very interesting point raised by an anonymous reviewer now is how that approach translates to languages with overt Q particles and whether these particles are then also always related to focus. A priori, nothing forces the Q particle to carry an additional focus feature, since it is possible that this is a property inherent to the wh-word itself. On the other hand, there seems to be evidence that Q particles are subject to the same island constraints that involve focus. First, note that in Tlingit, just as in Sinhala (Cable 2010), if the wh-element is contained inside an island, the Q particle needs to be merged outside that island. This observation suggests that the agreement process, be it based on Q features or on focus features, cannot cross the island boundary.

- (70) a. [[ Wáa kwligeyi<sub>CP</sub> xáat<sub>NP</sub> ] **sá** i tuwáa sigóo?  
 how it.is.big.REL fish Q your spirit it.is.glad  
 lit.: 'A fish that is how big do you want?' (tli, Cable 2008:129)
- b. \*[[ Wáa **sá** kwligeyi<sub>CP</sub> xáat<sub>NP</sub> ] i tuwáa sigóo?  
 how Q it.is.big.REL fish your spirit it.is.glad

However, this observation does not mean that the Q particle in Tlingit always hosts focus features in addition to Q features. Evidence for the contrary comes from the use of wh-elements as indefinites, which also require the presence of the particle. Thus, it appears to be the case that the Q particle in Tlingit might optionally be carrying a focus feature, just as the wh-words themselves in German or English.

- (71) Ax x'agáax'i yéi yatee ch'a aadóoch **sá** yawudlaagi.  
 my prayer thus it.is just who.ERG Q they.get.it  
 'My prayer is that someone learn it.' (tli, Cable 2006:59)

A similar restriction seems to hold in wh-in-situ languages like Japanese. As pointed out by Drubig (1994), wh-questions with the wh-element contained inside an island are possible, but only if the answer repeats the whole island. This again seems to suggest that the actual agreement target of the peripheral probe is not the wh-element itself but an element at the periphery of the island (Japanese, examples in (29) from Drubig 1994:8).

- (72) Q: Mary-wa [[John-ni nani-o ageta] hito-ni] atta-no?  
 Mary-TOP John-DAT what-ACC gave men-DAT met-Q  
 'What<sub>i</sub> did Mary meet [the man [who gave to John t<sub>i</sub>]]?'  
 A: \*Konpyunta desu.  
 computer it.is  
 '(It is) a computer.'  
 A': [Konpyunta-o ageta] hito desu.  
 computer-ACC gave men it.is  
 '(It is) the man (who) gave a computer.'

Even more evidence for a close connection between wh-questions and focus constructions comes from languages with a different kind of Q particle, namely languages in which the left peripheral marking of wh-elements and of focused constituents employs the same morpheme, something abundant in African languages. In Gungbe (Niger-Congo, Aboh 1998:12-13) for example, a wh-movement language, sentence initial wh-elements and sentence initial foci are marked by the same element, *wé*, and focus and wh-element cannot occur together.

- (73) a. wéma ló<sub>i</sub> **wé** Sená xíá t<sub>i</sub>.  
 book the FOC Sena read.PERF  
 'Sena read [the BOOK]<sub>F</sub>.'
- b. wéma té<sub>i</sub> **wé** Sená xíá t<sub>i</sub>?  
 book which FOC Sena read.PERF  
 'Which book did Sena read?'
- c. \*wéma ló<sub>j</sub> ménú<sub>i</sub> **wé** t<sub>i</sub> zé t<sub>j</sub>?  
 book the who FOC take.PERF  
 int.: 'Who took [the BOOK]<sub>F</sub>?'

Similarly, in Gùrùntùm (West Chadic, Hartmann & Zimmermann 2009:1342), *ex-situ*, i.e. left dislocated, focus is marked by the same morpheme as the fronted *wh*-element.

- (74) a. **Á** kwá bà wúm kwálingá-lá-ì?  
 FOC who PROG chew colanut-DEF  
 ‘Who is chewing the colanut?’  
 b. **Á** fúrmáyò bà wúm kwálingá-lá-ì.  
 FOC fulani PROG chew colanut-DEF  
 ‘[The FuLAni]<sub>F</sub> is chewing the colanut.’

Lastly, in Dagbani (Niger-Congo, Issah 2013), it is even possible to observe the subject-object asymmetry that occurs for focus marking in *wh*-questions as well. If focus is marked *ex-situ* by preposing, subjects are followed by the morpheme *n*, while objects are followed by *kà*. The same can be observed in *wh*-questions.

- (75) a. Chéntiwúni **n** tú-∅ biá máá.  
 Chentiwuni FOC insult-PERF child DEF  
 ‘It is Chentiwuni who has insulted the child.’  
 b. Wóhú **kà** ó kù-rá.  
 snake FOC 3.SG kill.IMPERF  
 ‘It is a snake (that) s/he is killing.’  
 (76) a. ηùní **n** t<sub>i</sub> dá-∅ lòrì?  
 who FOC buy-PERF lorry  
 ‘Who has bought the lorry?’  
 b. Sàhá dínì **kà** bóliηmèribá ηmε-rá t<sub>i</sub>?  
 time which FOC footballers play-IMPERF  
 ‘Which time do footballers play (football)?’

### 5.3. Interaction of information structural features and $\phi$ -features

The approach I have outlined takes information structural feature to play an important part in the syntactic derivation of the clause. Another approach that capitalizes on this idea is presented in Miyagawa (2010). There, it is argued that the difference between agreement based languages and discourse configurational languages depends on which features are inherited by T from C (Chomsky 2008),  $\phi$ -features in the former, discourse features ( $\delta$ -features) in the latter. However, following Jiménez-Fernández (2010), I assume that languages do not fall neatly in one of the two categories, but that it is possible for languages to be driven by processes based on  $\phi$ -features and  $\delta$ -features at the same time.

Consequently, since both features can play a role in narrow syntax, interactions between the two types of features are expected, and in certain languages, information structural marking impacts  $\phi$ -feature agreement. The first instantiation of this interaction can be found in long distance agreement, i.e.  $\phi$ -feature agreement that spans a finite clause boundary.<sup>14</sup> Most importantly for the present discussion, long distance agreement across a finite clause boundary in most instances appears to require the agreement target, the DP inside the embedded clause, to receive a spe-

<sup>14</sup>Long distance agreement into non-finite complement clauses (Bhatt 2005) might involve restructuring (Wurmbrand 2001) and is thus not discussed here.

cific information structural interpretation. Thus, it has been argued that long distance agreement in certain Algonquian languages depends on the agreement target receiving a topic interpretation, for example in Innu-aimûn (Branigan & MacKenzie 2002) and Passamaquoddy (Bruening 2001). Another well documented case of long distance agreement with embedded topics can be found in the Daghestanian language Tsez, with an example given in (77) (Polinsky & Potsdam 2001:584).

(77) Enir [ uḷā magalu b-āc'ruḷi ] **b**-iyxo  
 mother [ boy bread.III.ABS ate ] III.know  
 'The mother knows that as for the bread, the boy ate it.'

(78) Enir [ uḷā magalu b-āc'ruḷi ] **r**-iyxo  
 mother [ boy bread.III.ABS ate ] IV.know  
 'The mother knows that the boy ate the bread.'

In (77), the embedded absolutive DP receives a topic interpretation, as indicated in the paraphrase. Consequently, the matrix verb shows noun class agreement with the embedded topic. If the embedded absolutive DP is not interpreted as a topic (78), the matrix verb shows class IV agreement, which indicates agreement with the complement clause as a whole.

However, long distance agreement does not seem to be restricted to topics. Asarina & Hartman (2011), discussing Uyghur, a Turkic language, show that genitive subjects can show long distance agreement not only when topics, but also when focused.<sup>15</sup>

(79) [ Ötkür-niḡ-la kel-gen-lik ] χever-i muhim  
 [ Ötkür-GEN-only come-RAN-C ] news-3.POSS important  
 'The news that only Ötkür came is important.'

For a possible explanation of information structure driven long distance agreement, I follow Bjorkman & Zeijlstra (2014) in assuming that, for the embedded element to be available for agreement outside of its own finite clause, a phase, it needs to be visible at the edge of this phase. Information structure is usually assumed to be encoded in the high CP periphery of the clause (Rizzi 1997), and thus I assume that certain information structural projections count as being part of the phase edge. Consequently, if the embedded element enters into an agreement relation with such a head based on information structural features, its  $\phi$ -features become visible to elements outside of that phase. To account for the difference between (77) and (79), i.e. the difference between topic or focus determining accessibility to agreement with a higher head, it might be possible to argue for parametric variation that determines whether only the higher topic head counts as being at the phase edge (Tsez) or whether the focus head is already high enough (Uyghur).<sup>16</sup>

The second instance in which an interaction between information structural marking and  $\phi$ -feature agreement can be seen concerns agreement of focus markers. In general, languages differ in the way in which they mark focus, with intonation, movement or specific markers that indicate whether a constituent is focused or not being possible strategies. In some languages, the focus marker shows  $\phi$ -feature agreement with the constituent marked as focus. Bilua, a Papuan

<sup>15</sup>The glosses are taken from Asarina & Hartman (2011). They do not indicate the meaning of RAN.

<sup>16</sup>Note that under this approach, long distance agreement should also be possible without recourse to information structure, namely under those circumstances in which independent processes move elements to a position high enough in the embedded CP. This is argued for in Hamilton (2015) and Hamilton & Fry (to appear).

language, possesses two different focus markers, *ikio* (*kio*) for third person feminine human foci and non-human foci of an unspecified number, and *inio* (*nio*) for non-third person feminine human foci and singulative non-human foci (Obata 2003:263-264).

(80) O-bet saqor-a **inio** ko-a nene topi azo...  
 3SG.M-CONT go.down-PRES FOC.NONF 3SG.F-LIG ngali.nut top ABL  
 ‘He came down from the top of the nglai nut tree ...’

(81) ko ta molu-a-ma **ikio** tu ngo-ba k-a tobet-e  
 3SG.F TOP pregnant-LIG-3SG.F FOC.F IRR 2SG-PROS 3SG.F.O-VAL get.water-IMP.SG  
 ‘... she is pregnant and [so] you will go and get water for her, ...’

Lavukaleve, another Papuan language, shows an even richer paradigm of focus markers. In this language, they inflect for person, number, and gender of the focused constituent (Terrill 2003:290).

(82) Ngai totonga **feo** o-liki-re a-lei  
 1SG money(F) 3SG.F.FOC 3SG.F.O-want-NF 1SG.S-exist  
 ‘I want money (and not something else).’

(83) Aira la fo’sal na o-u-m **fin**  
 woman(F) SG.F.Art fish(M) SG.M.Art 3SG.S-eat-SG.M 3SG.M.FOC  
 ‘The woman ate the fish.’ (as answer to ‘What did the woman do?’)

Of interest is especially (83), since, as answer to the question, the whole VP serves as focused constituent. According to the focus projection rules of Selkirk (1995) focus would be able to project to the VP level if the direct object receives the initial F-feature. Consequently, an agreement pattern like (83) is expected if the focus marker actually marks the original focus exponent.

## 6. Conclusion

In this paper, I have argued for a syntactic approach to association with focus based on agreement, more specifically, agreement based on focus features. After showing that a semantic analysis requires at least some instances of indexing, and thus violates the Inclusiveness Condition, I have presented a syntactic approach of association with focus in which the focus sensitive particle agrees with the focused constituent based on focus features. Two elements in the left periphery are also involved in this agreement relationship, the *Foc* head of the FocP and also the highest head in the clause *Force*, both part of an extended left periphery following Rizzi (1997). This approach has then been used to derive restrictions on possible association patterns for islands and certain kinds of complement clauses, basically analysing the impossibility of certain patterns as caused by intervention. Finally, the syntactic approach to association with focus was used as a starting point for a discussion of other phenomena that seem to be related to information structure. I have presented a syntactic analysis of intervention effects caused by discourse particles in terms of relativized minimality and finally sketched a possible approach to an analysis of information structural  $\phi$ -feature agreement.

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### *Abbreviations*

ABL	ablative postposition	NONF	non-feminine
ABS	absolutive	O	object clitic
ACC	accusative	PERF	perfective
C	complementizer	PL	plural
CONT	continuity marker	POSS	possessor
DAT	dative	PRES	present tense marker
F	feminine	PROG	progressive aspect
FOC	focus	PROS	prospective marker
FP	focus sensitive particle	PRT	particle
GEN	genitive	Q	question particle
IMP	imperative mood marker	S	subject
IMPERF	imperfective aspect	SG	singular
IRR	irrealis marker	TOP	topic
LIG	ligature	VAL	valency increasing marker
M	masculine		

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# Language ideologies in the writing of nonstandard varieties: the case of written British Creole

Liis Kollamagi

This paper examines the use of Caribbean-English lexicon Creoles in two British novels: Zadie Smith's *White Teeth* and Andrea Levy's *Small Island*. Creole languages have traditionally been considered 'broken' English dialects and their socio-historical background determines their strong symbolic value. Creoles are markers of identity and establish associations with social groups; for example, British Creole usage in London has become the symbol of Black Britishness. The paper carries out a quantitative analysis on Creole orthography and spelling choices, and the aim is to demonstrate the preservation and/or subversion of stereotyped, ideological ideas about Creole and its speakers.

## 1. Introduction

This paper analyses two contemporary British novels: *Small Island* by Andrea Levy and *White Teeth* by Zadie Smith. Both authors are London-born, with Jamaican ancestry, and both novels employ Creole speech. This mixture of Jamaican heritage, London's multicultural atmosphere and familiarity with issues regarding the Afro-Caribbean community raise expectations for the conscious use of both the Creole culture and language.

The written Creole language provides a good example of how language use may convey linguistic and political alliances or disassociations, especially in the case of former colonies (Sebba 2012; Cahill 2014). According to Fairclough (1995), diverse linguistic forms and levels may be ideologically invested, and thus single orthographic and spelling choices may be seen as an ideologically meaningful social practice (Sebba 2007). Moreover, orthography emphasises the visual surface of the written texts (Chouilaraki & Fairclough 1999) and the visual impact of what a language 'looks like' raises issues of national and subcultural identity (Jaffe 2000; Sebba 2012).

The first step of this research involves a quantitative analysis of the Creole spellings in both novels and, for this purpose, a corpus has been created containing the portions of text identified as Creole. The second step consists of a qualitative analysis of the Creole spellings with the aim of demonstrating how single orthographic choices reflect language ideologies, and index the social status of the speaker. For this purpose, the study draws on Critical Discourse Analysis (CDA) and Blommaert's (2005) definition of discourses as all semiotic

data and all meaningful semiotic human activity. Based on this last definition, orthography is treated as a type of discourse by which ideologies and identities are produced and performed. Two concepts become relevant, i.e. the construction of knowledge through discourses (Fairclough & Wodak 1997) and the relationship between linguistic features and the speakers' identity (Irvine & Gal 2000; Jaffe & Walton 2000).

## *2. Standardisation and the development of the Creole varieties*

This paper deals with Creole languages, which are defined next, and focuses on the written form of these primarily oral and non-standard languages. This raises issues of standardisation and language ideology, since Creole languages have developed mostly in colonial contexts and are traditionally opposed to standard, written, European languages (Sebba 1998; Cassidy 2007). Therefore, this paper first outlines the connection between the language ideologies and colonial discourses that serve to better contextualise Creole varieties.

According to linguistic anthropologists Irvine & Gal (2000:35), linguistic ideologies 'are conceptual schemes or ideas with which participants and observers frame their understanding of linguistic varieties and map these understandings onto people, events and activities'. Linguistic ideologies are then linked to colonial discourses that claim the superiority of the European civilisation in opposition to the 'primitive' cultures of the East assuming that 'linguistic differences appeared to be the "natural" consequences of spiritual or even biological differences between speakers' (Irvine & Gal 2000:73). Thus, language is central to determining the level of civilisation, and racial prejudices are based on the typology of language and the presence of writing, rather than only on the colour of the skin. Similarly, the linguistic diversity of native cultures and the linguistic distinctions are described and valued according to the principle of the standard language. As a matter of fact, Gumperz & Cook-Gumperz (2008) highlight how colonial discourses assume the purity of language and identify 'standard' languages, which are then associated with a community, and their territory, which is compared to European nations.

The concept of standardisation and of a standard language is linked to the category of prestige and, according to Milroy (2001:532), 'standard variety has been equated with the highest prestige variety'. He continues, stating that language varieties themselves do not have prestige, but acquire prestige when their speakers have high prestige. Consequently, languages become indexical of the social prestige of their speakers, and this relationship between linguistic features and social groups is described by the concept of iconisation, or indexicality (Irvine & Gal 2000). Based on this last notion, linguistic elements index social groups and become iconic representations of them, displaying a link between a social group's inherent nature and language.

The question of prestige becomes central to the case for Creole languages, but, before tackling the ideological issues further, this paper provides a brief overview of this language category. Creole languages, in truth, were not considered languages until the 1960s, when the new field of Creole linguistics or Creolistics emerged. Before that, according to Le Page (2006), Creole languages – and especially English-lexicon Caribbean Creoles – were considered 'bad talk' and 'broken talk' and, in my opinion, they were seen as erroneous dialects of the English language. However, the appropriate characterisation of Creole languages has been problematic and is a matter of continuing controversy (Robertson 2006).

Traditionally, Creoles have been characterised by some common grammatical features and by their evolution from pidgin varieties (see Bickerton 1981; Holm 2000), but some recent research on Creolistics emphasises the unique sociohistorical context in which Creole languages have developed and the centrality of colonial discourses in determining their inferiority. In fact, Mufwene (2000:78) affirms that the evolution of Creole vernaculars is ‘similar especially in their temporal and geographical positions, viz., in tropical colonies settled by Europeans practising slave-based economy from the 17th to the 19th centuries’. Mühleisen (2002) argues that the category of Creole and Pidgin languages includes very diverse languages in terms of typology and geographical origin, but which share a common colonial past and asymmetrical power relations.

The Trinidadian linguist and founder of the *Journal of Creole and Pidgin Languages*, Mervyn Alleyne (1994:8), asserts that Creoles are ‘the most stigmatized of the world’s languages’ and that their forced classification is the direct consequence of colonial ideology. Likewise, DeGraff (2005) deconstructs all the major hypotheses on Creole languages and their formation, and focuses on the ideological foundation of their categorisation. DeGraff (2005:574) describes the link between power and discourses, which constructs the ‘truth’ about Creoles:

The genesis of creolistics may thus offer a clear case study of the linguistics-ideology interface – namely, how sociohistorically rooted ideological and geopolitical concerns promote, and are reinforced by, certain types of linguistic (mis)analyses. In the history of creolistics as in the history of other human sciences, power did produce the sort of “reality” – the “regime of truth” – that benefited those in power.

The last statement follows a Foucauldian tradition that relates discourses to the creation of knowledge and of ‘truths’, and therefore to power (see Mühleisen 2002). In CDA, this approach is best described by Fairclough & Wodak (1997:258) who claim that discourses ‘constitute situations, objects of knowledge and the social identities of and relationships between people and groups of people. It is constitutive both in the sense that it helps to sustain and reproduce the social status quo, and in the sense that it contributes to transforming it’.

Therefore, Creole languages have been ‘constructed’ in and by colonial ideological discourses, which diminish their statuses, and result in the negative attitudes towards Creoles and their low prestige. The latter is a direct consequence of the marginalisation of Creole speakers in colonial plantation societies based on slavery, since Creoles were spoken by slaves who were considered inferior human beings (Mühleisen 2002). Colonial discourses in the form of writings by European travellers and writers, as well as by plantation owners or missionaries, focus on the ‘primitive’ and barbaric nature of the languages spoken by slaves, reinforced by the language philosophy of the 19th century.<sup>1</sup>

As previously mentioned, the present paper focuses mainly on English-lexicon Caribbean Creoles, which are primarily the result of contact between one European dominant language (English) and other non-Western, mainly African, varieties (McArthur 2002). Today, English is the sole official language in all of the Anglophone Caribbean and none of the English-lexicon Creoles has official recognition nor a standardised written form. This is, in part, due to the colonial legacy that believed that Creoles were not appropriate languages for writing. Nevertheless, the language situation has changed and, today, these Creoles share high covert

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<sup>1</sup> In the 19th century, though in reality from the 16th century onwards, linguistics was influenced by anthropological studies, language philosophy and evolutionist theories, which were manipulated to sustain the supremacy of the European cultures and languages. Thus, ‘race’ was also determined in terms of language rather than just physical characteristics such as the colour of the skin. (see Bernardelli & Pellerey 2002; Coulmas 2003; Olson 1994).

prestige and are written on a daily basis, especially in computer communication (Hinrichs 2004). More Creole is used in the public sphere as well, in TV and radio programmes, and, in the written form, in advertising and to some extent in newspapers (Shields-Brodber 1997), as well as in fiction.

Even though the introduction and spread of Creole writing does not necessarily imply standardisation (Sebba 2007), the written form of a non-standard oral language raises issues of a country's identity and of language independence. The written form, in effect, may embody language alliances or dissociations, especially in the case of former colonies in search of a national identity (Cahill 2014; Jaffe 2000; Sebba 2007, Sebba 2012) and the new language 'should not "look like" that of the imposed colonial language or on the contrary, not "to look different" from the lexifier, which is felt more prestigious' (Sebba 2007:75).

### 3. Orthography and language ideologies

Writing implies the adoption of symbols to express meaning in a visual form and, in the alphabetic writing systems, these symbols are letters or graphemes that all have conventional meanings corresponding to the sound system of the language (Halliday 1989). Ideally, this correspondence should be one-to-one, i.e. one letter corresponds to one sound (one grapheme represents one phoneme), but in many languages the relationship is irregular and confused. For example, the English phoneme /e/ of 'dress' can be represented graphically in various ways, such as *dress*, *bet*, *sweat*, *any*, *said* or *says*, and, at the same time, one letter or combination of letters can have more than one pronunciation, such as <ough> in *cough*, *though*, *rough*, *though*, *thought*, *plough*.

Therefore, the rules on how to write a specific language are determined by its sound system and by other – extra-linguistic – factors, and are described by the orthography of that language. However, before discussing orthography further, the notion of written text itself will be considered, since there has been an increased interest in writing, in linguistics and in its different branches. Lillis & McKinney (2013:417) problematise 'the dominant lenses through which writing is understood by opening up a debate how writing as an object of study might be reconfigured in sociolinguistics' and outline three orientations towards writing, i.e. ethnography, the domain of education and digital technologies.

Similarly, Chouliaraki & Fairclough (1999) describe that written texts are increasingly multi-semiotic and that written language may be treated as a visual surface. The traditional language forms of written and oral are now complemented by multimodal discourses, and the format, layout and images are becoming increasingly relevant (see Johnson & Milani 2010; Machin & Mayr 2012). According to Fairclough (1995:70), 'a more diverse range of linguistic features and levels may be ideologically invested than is usually assumed, including aspects of linguistic form and style as well as "content"'. Thus, orthography and, more specifically, single spellings can be conceived both as linguistic features and as a linguistic form that may be ideologically invested. Moreover, spelling choices are part of the visual surface of the written texts and their visual impact may be compared to that of images.

As mentioned in the previous section, in the case of non-standard languages, the choice of the writing system implies language ideological decisions, and may express national or even subcultural identities (Jaffe 2000; Sebba 2012). In the same way, single orthographic and spelling choices can be ideologically meaningful, especially in the case of non-standard

languages that lack orthographic rules. The writer can choose from a set of alternatives, and thus orthography and spelling may become a type of social practice (Sebba 2007). According to Jaffe & Walton (2000), non-standard writing is never neutral, and single orthographic choices are associated with power, social status and identity issues.

#### 4. *What is British Creole?*

British Creole is a variety of Jamaican Creole spoken in the UK, resulting from the contact of Jamaican Creole with local English vernacular; it is the outcome of the large-scale immigration to London from the Caribbean region after World War II and has significantly changed the British sociolinguistic landscape (Mair 2003). If the first immigrants spoke diverse Caribbean Creoles, the second generation, regardless of their specific Caribbean origin, adopted the variety of Jamaican Creole. The latter is a Caribbean English-lexicon Creole spread on a continuum of varieties linking the ‘basilectal’ or broadest Creole to the ‘acrolect’ variety similar to a local standard English.<sup>2</sup>

One of the main characteristics of British Creole is its being acquired in the peer group during adolescence as a second language or even as a second dialect (Sebba 2012). Therefore, young speakers use local English as their first language and for communicative purposes, while the Creole variety is more a symbolic code to mark Black British identity (Sebba & Tate 2002).

Due to the high covert prestige of Black culture in general, increasingly more white speakers, as well as speakers of other ethnicities, adopt some features of British Creole. Rampton (1995:485) has discussed this phenomenon as language crossing, which ‘involves code alternation by people who are not accepted members of the group associated with the second language that they are using’.

Language crossing refers to another intrinsic element of British Creole, i.e. its being a simplified version of Jamaican Creole and ‘more a set of norms to be aimed at than an internally coherent and consistent system’ (Le Page & Tabouret-Keller 2006:180). This means that speakers mostly adopt some tokens or stereotypical features associated with Creole and employ these as markers of Black identity. Thus, ‘an idealized London Jamaican exists, but which is rarely achieved resulting in a variety of speech which is (a) highly variable from speaker to speaker, (b) highly variable internally, (c) tends to “revert” to London English’ (Le Page & Tabouret-Keller 2006:180).

To briefly summarize, British Creole is above all a symbolic variety, which functions and uses are restricted and occur in code-switching with vernacular English. If its first value was to express a shared experience of living in UK as a marginalized group, in time its use has allowed black British people to make themselves visible and to ‘perform’ their belonging to a specific culture and ethnic group and ‘has functioned as a simplified optional “we-code”’ (Mair 2003:231). As an in-group code British Creole identifies its speakers as members of the black community and has become the symbolic variety of Black Britishness.

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<sup>2</sup> The linguistic situation in Jamaica has been defined with the concept of Creole continuum, which includes a wide range of varieties starting from the ‘acrolect’, the form most similar to the Jamaican Standard English, to the broadest rural Creole called ‘basilect’, while the intermediate varieties are ‘mesolect’ forms (see De Camp 1971). Most speakers have a command of more varieties and choose between them according to the context (Hinrichs 2004).

### 5. *British Creole in writing*

Considering that none of the Caribbean English-lexicon Creoles has a standardized written form, it is even more surprising how much they are written on a daily basis. Once written Creole was primarily used in different art forms by Caribbean authors as a means to subvert dominant culture and to freely express the true language of the people (Mühleisen 2002). Today, most of the writing in Creole is produced on the internet, since computer mediated communication is less formal and regulated, and encourages the writing of Creoles (Hinrichs 2004).

The emergence of the internet and other new media has certainly promoted written Creole, shaping also orthographic conventions. In many of these contexts orthographic practices are performed, resulting in high variability and creativity of Creole spellings. However, the new media contexts are often very informal and private, such as emails, chats, blogs etc. and orthographic choices reflect individual uses that are less influenced by wider socio-cultural aspects. Therefore, the present study aims at examining Creole writing in a highly-conventionalised institution, such as literature, where Creole contrasts openly with the standard language and culture, and where the function and status of a nonstandard variety may or may not be publicly challenged.

Written Creole may follow two alternative orthographic models, i.e. that of standard English and that of the phonemical orthography developed in the *Dictionary of Jamaican English* by F. G. Cassidy and R. B. Le Page. The latter represents the sound system of the Creole variety following the correspondence of one sound-one letter and distinguishes itself from the lexifier language representing ‘political emancipation and national identity’ (Hellinger 1986:55). However, authors never use the phonemic spelling, since it ‘looks’ too unusual and it does not correspond to the reader’s expectations with a written form she/he is accustomed to.

A sentence in Standard English ‘two weeks ago, I ran into one of my friends at an uptown pharmacy’ in the phonemic orthography would look like ‘*laas wiik, mi go a wan optoun faamasi an mi bok op wan a mi fren*’, whereas the one following the English model would be ‘*last week, mi go a one uptown pharmacy and mi buck up one a mi fren*’. Although unfamiliar, the phonemic spelling expresses Creole language without any mediation of the English model. The phonemic orthography is more difficult and strange for those literate in standard English, but that might be the real aim of written Creole – be unique and autonomous.

Caribbean writers have for long used literature as a space where to convey the ‘creoleness’ of their spirit, in addition to subverting the colonial power and claiming rights for the Creole population. Today, this Caribbean cultural heritage is present also in many works of British born authors, just like the linguistic variety of British Creole may be part of their language. It is interesting to see, if and how these writers convey their Caribbean legacy in their works creating hybrid cultural spaces. Furthermore, this hybridity might be created not only through traditional discourse structures, starting from the macrostructures of meaning and the linguistic levels of lexis and syntax, but also through the spelling and orthographic choices of a nonstandard variety. For this analysis two novels have been chosen which both include Creole spelling, Andrea Levy’s (2004) *Small Island* and Zadie Smith’s (2000) *White Teeth*.

The choice of the two novels was determined mostly by the usage of Creole and by the Jamaican origins of the authors, though both British born. Additionally, the novels deal with topics regarding Caribbean immigrants in London: *Small Island* describes the arrival of the first Caribbean immigrants after the Second World War and their discrimination in London, whereas *White Teeth* illustrates the cultural and linguistic conflicts between different generations of Londoners with Caribbean origins.

The usage of Creole in the novels may be an attempt to both add veracity to the speech as well as to symbolically promote Creole culture. However, the two authors employ a Creole orthography based on the English model, instead of a phonemic orthography and it may reinforce the inferior status of the Creole language. This is due also to the fact, that deviant spelling often seems erroneous and incorrect, which in turn maintains the perception of Creole as ‘bad’ English. The reasons for not employing the phonemic orthography may be manifold, presuming it was an option at the first place. Probably the readers of the novels, as well as the publishing industry are to be taken into consideration. In any case, none of the novels make any attempt to better transcribe the Creole language than just to imitate the English model.

## 6. Methodology

The main aim of my research is to analyse the use of the Creole variety called British Creole in contemporary literary texts, focusing on if and how this variety is expressed through the level of spelling and orthography. Moreover, the study concentrates on the ideological language issues embedded in the writing of nonstandard languages and, for no particular reason, aims to give a linguistic description of British Creole.

The first phase of the analysis consists of the creation of a very small corpus containing the Creole parts of both texts. However, this section serves only the purposes of this research and is not built to be accessible to third parties, and therefore the criteria for the corpus design does not consider aspects not necessary for the present analysis.

Firstly, the parts of the texts in Creole were identified and localised. Both novels are mostly written in standard English and the extracts in Creole constitute small portions of the texts. Although the focus of the research is on Creole spelling, and thus on phonological aspects, I chose not to transfer into the machine-readable form any single Creole words featuring Creole spelling, but only entire sentences. Sentences were included in the corpus when they matched at least one of these rules:

1. A sentence containing Creole vocabulary or Creole ‘respelling’.
2. A sentence is pronounced by Creole-speaking characters and contains nonstandard English syntax.

Sentences such as ‘You bring some guava, some rum – you have a little yam in that bag?’ (Levy 2004:12), with the presence of Creole vocabulary *guava* and *yam*, or another example ‘You here! You here at last!’ (Levy 2004:14) – presenting the absence of the auxiliary verb – are considered Creole. This process of defining Creole speech, as opposed to the rest of the novel that is in standard English, is central, for it allows the collocation of respellings and their frequency, as well as delineating the relationship between the portions in Creole and those in standard English.

In the next step, the extracts in Creole were transferred into a text file, which allowed the use of a software package containing basic text analysis tools. In fact, the quantitative study

of the novels established the number of tokens and types for Creole words, and allowed the collocation of single Creole respellings. I followed Suzanne Romaine's (2005) definition of 'respelling', which comprises every spelling that deviates from standard English. In turn, these respellings may reflect Creole phonological or phonetical differences, as well simply being 'eye-dialect'. The latter means those respellings that contrast visually with the standard language, but do not reflect any Creole phonological features (Hinrichs 2004; Romaine 2005).

Next, the respellings were categorised into those reflecting phonological features simplifying the Creole form and into respellings that express genuine Creole elements. The first category comprises the most salient phonological features, such as TH-stopping, various types of loss of the final consonant and the deletion of the initial /h/. The second set of respellings concern both phonological elements, as well as eye-dialect and Creole vocabulary.

The following qualitative part of analysis is based on CDA methods. It consists of two steps: the first step being a description of the discourse, i.e. of the orthographic and spelling choices, and the second step being an interpretation and explanation of the social and ideological elements. In this second step, the study refers to the concept of 'member's resources', which are the representations, world views and background assumptions of the participants in the process of discourse, i.e. the author and the reader (Fairclough 2001). The qualitative study outlines how language is employed to reflect the speaker's identities and, especially, the dynamic shifting between codes that may represent a mobility between the diverse selves of one speaker.

### 7. Case study 1: Andrea Levy's *Small Island*

Andrea Levy's fourth novel *Small Island* is set in post-war London in the year 1948, which is symbolic for the Caribbean community, since it marks the beginning of Caribbean immigration to the UK with the arrival of the ship *Empire Windrush*, together with 500 immigrants, mostly Jamaican. The main characters of the novel are a young, Jamaican couple, Gilbert and Hortense, who both leave their home island to seek better opportunities in London. He arrives first to find work and a place to live, and sends then for his wife Hortense, with whose arrival at the docks of London the novel opens. In addition to the Jamaican couple, the novel features two other main characters, the English landlady Queenie and her husband Bernard. The book is structured into the first-person narrations of the four characters and the time of the narration shifts between the present day and the past for each character.

The first-person narration allows the main characters to reveal themselves through their own language, which becomes even more central in the case of the Jamaican speakers. They all employ some Creole, starting from the 'acrolectal' form used by Hortense, which only includes single Creole respellings in a few cases, to the rural 'basilect' form of Jamaican Creole spoken by Miss Jewel. In between, there are different shades of stereotypical Creole language, exemplified primarily by the speech of male Jamaican characters, Gilbert, Kenneth and Gilbert's cousin Elwood.

The novel shows great awareness of language issues and, on many occasions, characters are conscious of their linguistic behaviour. For example, Hortense criticises the way her husband talks '[...] he talked in a rough Jamaican way. Whereas I, since arriving in this country, had determined to speak in an English manner. It was of no use to imitate the way of speaking of those about me, for too many people I encountered spoke as a Cockney would'

(Levy 2004:372). However, Hortense's standard English is archaic and bookish, the result of private schooling in Jamaica, where she 'could recite all the books of the Bible in the perfect English diction spoken by the King' (Levy 2004:52). Consequently, the novel deals with negative language attitudes towards the Creole variety, and the prestige of standard English is central to the story; the author continuously tries to undermine Hortense's efforts to sound too British. In fact, throughout the novel people do not understand her, such as in the humorous exchange between Hortense and Queenie where Hortense tries to ask for a basin:

'Excuse me, but would you perchance have a basin that I might get a use of?'

'A what?'

'A basin,' I repeated.

'Sorry.'

'A basin to put at the sink.'

'A bee – to put what?'

'A basin.'

'I'm sorry but I don't understand what you're saying.'

I thought to say it again slower but then remembered an alternative that would work as well.

'A bucket,' I said.

'A what?' she started again.

It was useless. Was I not speaking English?' (Levy 2004:188)

The author deliberately employs Creole – and, in a few cases, other nonstandard varieties such as Cockney or Afro-American vernacular English – to express the lower social status of the speakers. In fact, the most 'basilect' form of Jamaican Creole is spoken by Hortense's grandmother, a house servant with no schooling. Likewise, other characters who employ the most Creole and whose speech includes the majority of the Creole respellings are either from rural Jamaica, like Elwood, or are characterised by low social aspirations, like Kenneth.

Looking at these examples, we can say that the excess of Creole elements outlines social class and status, and seems to be connected to the character having little ambition to improve his/her social position.

### 7.1. Quantitative analysis

The novel *Small Island* contains approximately 162,875 words, of which 6,637 are identified as Creole. Despite the many Jamaican characters and the high language awareness of the novel, the majority of the Creole speech is expressed on the levels of morphology and syntax, much less through nonstandard orthography and spelling. Therefore, the Creole speech in the text is mostly deviant in syntax and among the 6,637 tokens only 180 represent Creole respellings (2.7%). In proportion to the whole text the Creole extracts represent about 4% of the novel.

Most of these nonstandard respellings express phonological features common to many English varieties and colloquial speech in general. These rules, in the case of *Small Island*, rank as follows (from highest to lowest): loss of the final consonant /t, d/, loss of the final consonant cluster <ng>, TH-stopping and H-dropping.<sup>3</sup> The rule of the loss of the final

<sup>3</sup> These phonological rules are common to many nonstandard, and often stigmatised, varieties such as Pidgin and Creole languages, but also Irish varieties (Romaine 2005). H-dropping is also an accentuated, stereotypical element of spoken colloquial English language (Bennett 2012); Woolard (2008:443), referring to

consonant applies to 38% of the Creole respellings, within which the loss of the final <t> is the most productive and applies to 27% of the Creole spellings. As a matter of fact, in Jamaican Creole the occlusive sounds [t] and [d] are reduced after other consonants and in the final position in a word any consonant may be lost. Therefore, high frequency words such as ‘want’, ‘must’ and ‘just’ are respelled *wan’* (35 tokens), *mus’* (nine tokens) and *jus’* (four tokens); all employing an apostrophe to indicate the absence. Interestingly, the same rule is almost never applied for the final voiced plosive sound [d] and the ordinary word ‘and’ is respelled only once as *an’*.

Another loss of the final consonant concerns the consonant cluster <ng>, which is especially productive in progressive verb forms (19 tokens), such as in verbs *goin’*, *tellin’* and *chattin’*, but also in the word *nothin’*. Even if the loss of the final consonant is productive, in most cases it is not applied. For instance, the word ‘want’ is spelled nine times in the standard form and 35 times as *wan’*, whereas ‘just’ is expressed in the standard form 25 times against four tokens of *jus’*. This tendency shows the high variability and idiosyncratic nature of the Creole spelling, which depends on the authors’ individual choices.

The rule of TH-stopping is ‘a general trait of vernacular English around the world’ (Romaine 2005:112), but in *Small Island* – contrary to the other novel *White Teeth* – it is rarely applied. TH-stopping is a linguistic practice that produces English interdental fricatives /θ, ð/ as plosives /t, d/, and it is especially productive in ordinary and, often, deictic words, such as *dat*, *dere*, *dis*, the definite article *de* or the pronoun *dem*. *Small Island* constitutes an exception, since TH-stopping is almost never applied to frequently used words – except for *de* (six tokens) – but it is employed a few times in the words *everyt’ing* (eight tokens), *t’ief*, *t’ieve* and *t’ink* (three tokens). The apostrophe is used here to mark an absence, just as in all cases of the loss of the final consonant.

Simplifications also include the loss of the initial /h/, again applied much more extensively in *White Teeth* (52 respellings) than in *Small Island* (three respellings). In the sound system of Jamaican Creole, the velar glottal fricative /h/ is absent and, graphically, it is frequently lost in unemphatic contexts (Sebba 1993). In *Small Island*, only three words are respelled: *’ill* (hill), *’ave* (have), *’appen* (happen). This loss of the initial /h/, as with other simplifications, is not only specific to Creole varieties, but characterises vernacular English and spoken language in general.

In addition to these respellings, which simplify the Creole form and draw attention to the absence of the former compared to the standard spelling, both novels include also respellings which express some genuinely Creole phonological rules and eye-dialect. In *Small Island*, two rules specific to Jamaican Creole (and British Creole) are applied:

1. Double velar plosives /k, g/ in the medial position in *likkle* ‘little’ (13 tokens) or *miggle* ‘middle’.
2. The insertion of glides, /j/ and /w/, after velars or bilabials, as in *Lawd* ‘Lord’, *djam* ‘damn’, *nyam* ‘eat’, *bwoy* ‘boy’ or *gwan* ‘going to’.

The first element is a unique Jamaican Creole feature, according to which the English alveolar plosives /t, d/ change into velar plosives /k, g/ in the middle position and before the sound /l/ (Cassidy & Le Page 2009; Sebba 1998). The second phenomenon functions to distinguish the vowel quality of sounds [o] and [oi], which are otherwise pronounced as [a]

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studies on African American Vernacular English, claims that TH-stopping is ‘a widespread and salient urban marker of emphasis and toughness because of its association with immigrant groups’.

and [ai]. One example of the latter rule is the case of *kyant* ‘cannot’ which could be confused with ‘corn’ [kaan] (Cassidy 2007).

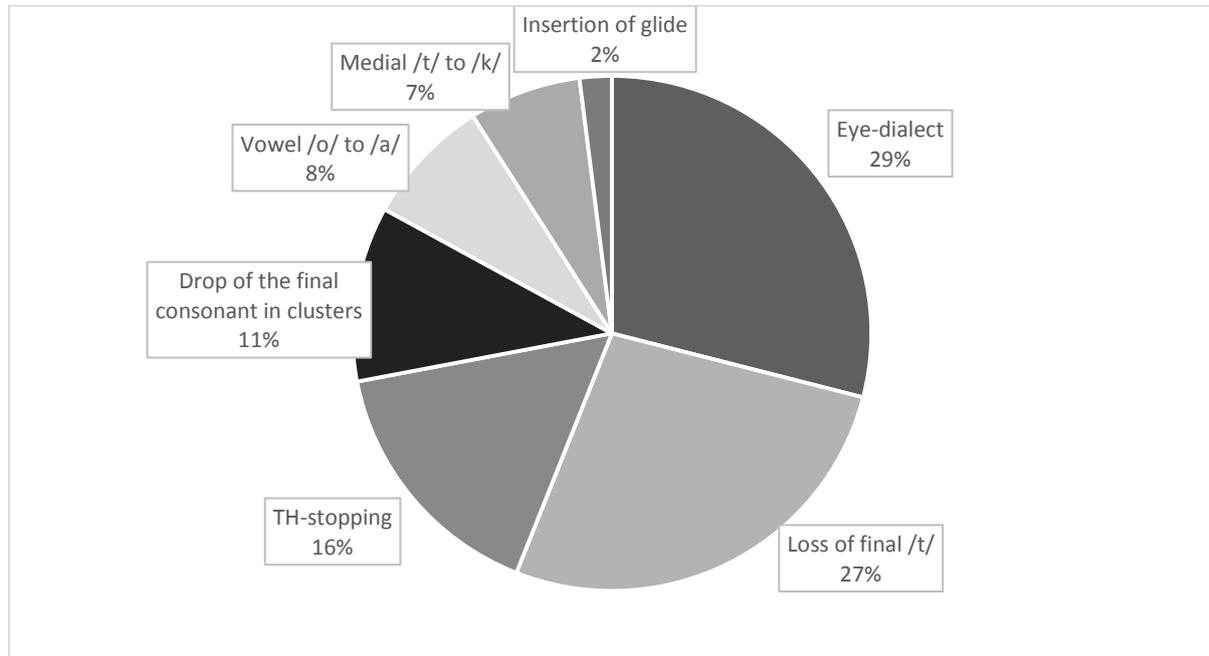


Fig. 1. Rate of phonological rules applied in Small Island

#### 8. Case study 2: Zadie Smith's *White Teeth*

Zadie Smith's debut novel *White Teeth* assured her the title of ‘the first literary celebrity of the 21st century’ (Perfect 2014:76). It was published at the end of 2000 and was praised by Salman Rushdie, meaning that the success of the book was secured even before it was printed. This novel can be taken as one of the best examples of literary marketing – as Zadie Smith was herself the perfect demographic<sup>4</sup> – and of how the media and critics registered and promoted the main themes and qualities advertised by the publisher. In fact, *White Teeth* instantly became the ‘landmark for multicultural Britain, a superb portrait of contemporary London’ (Perfect 2014:76) and ‘a novel whose depiction of multicultural London was wide-ranging and comprehensive’ (Watts 2013:852).

The novel is an easily readable family saga of two immigrant families living in North London, one of Jamaican decent and the other with Bangladeshi roots, and it mainly outlines the different attitudes towards English society embodied by different generations of immigrants. This variety of characters with different cultural origins, as well as the conflicts between the generations, produces an apparently multicultural and multilingual context, which is claimed to be the new London. This is reinforced by the usage of different language varieties, such as Creole, Cockney and Bengali (little), and different representations of street language and youth talk. This multitude of ways of speaking gives the illusion of positive multiplicity and vibrancy, but, on closer analysis, stereotypes and generalisations emerge.

<sup>4</sup> The reference here is to her being young and attractive, and, moreover, ‘black and female’ (Hattenstone 2000).

Creole-speaking characters in *White Teeth* can be divided into three main roles, plus other minor characters. The former are represented by three female figures belonging to three different generations. These are Hortense, the Jamaican-born grandmother; her daughter Clara, who seeks to shift her linguistic identity from Jamaican to Cockney and, finally, achieves middle-class status by using standard English; and the third generation is exemplified by Irie, who avoids Creole even more than her Bangladeshi friends.

Hortense is the main Creole speaker and her speech includes most of the Creole specific phonological respellings, as well as some other vocabulary; for example, ‘Pickney, nah even got a gansy on – child must be freezin’ [...] Come 'ere. Now come into the kichen an' cease an' sekkle’ (Smith 2001:382). In this sentence, *pickney* and *gansy* are Creole lexis meaning ‘child’ and ‘shirt’, respectively, and, in addition, the word *sekkle* employs the Creole feature of double velars in the medial position before an /l/.

Clara is a remarkable character regarding Creole use, and is Hortense’s British-born daughter. She appears in the novel as a teenager and, at first, her speech is a mixture of London English and Jamaican Creole: ‘Cheer up, bwoy! Man...dey get knock out, But I tink to myself: come de end of de world, d'Lord won't mind if I have no toofs’ (Smith 2001:25). Here, Creole is expressed primarily by the word *bwoy* respelled with the additional velar glide /w/ and by English fricative sounds produced as plosives. At the same time, the word *toofs* is an example of London English.

Later on in the novel, Clara breaks off with her mother and her Jamaican origins, and her progress in social status is achieved in the total replacement of Creole with standard English. An example that shows the linguistic conflict of Clara is ‘You're pregnant? Pickney, you so small me kyant even see it.’ Clara blushed the moment she had spoken; she always dropped into the vernacular when she was excited or pleased about something’ (Smith 2001:66).

The third-generation character, Irie, does not speak a word of Creole. Instead, she seems to avoid Creole speech; her social aspirations are reflected in her ‘overcompensation of all her consonants’ (Watts 2013:858) and she uses standard English even in situations where others speak Creole or code-switch into it.

### 8.1. Quantitative analysis

*White Teeth* contains Creole speech only in dialogue, and never in indirect speech or in the descriptive parts. The novel comprises 169,389 words, of which 4,105 are identified as Creole, representing 2.4% of the total. Of these, 838 tokens were Creole respellings, representing 20.4% of all the Creole speech.

For this novel, the most salient phonological feature is TH-stopping, which is applied to 48% of all Creole respellings (409 tokens). This rule is applied very consistently and for almost all Creole words, including very common words such as (in order of frequency) *de* (the), *dat* (that), *wid* (with), *dis* (this), *dem* (them), the verb *tink* (think) and the noun *ting* (thing). TH-stopping is also employed on single occasions for words such as *mout* (mouth), *trow* (throw), *tanks* (thanks), *tree* (three), *troot* (truth), etc. The same rule is also present in the medial position where the plosive sounds become double, for example, in the words *mudder* (mother), *boddrin* (bothering), *anudder* (another), *udderwise* (otherwise). The latter doubling has no linguistic foundation and is thus an example of eye-dialect.

As for the loss of final consonants, the three different types of consonant loss are also applied in *White Teeth*: the loss of the final /t/, the loss of the final /d/ and the dropping of the final consonant /g/. These are all almost equally productive, with 51 tokens for the loss of the /d/, mainly in frequent words such as *an*’, and 40 tokens for the loss of the /t/ in common words such as *wan*’ (22 tokens) and *jus*’ (18 tokens). On the whole, the three types together count for 28.3% of respellings, still second in rank after TH-stopping. Simplifications also include the loss of the initial /h/, which is applied much more extensively in *White Teeth* (52 respellings) than in *Small Island*. Some examples from *White Teeth* are *’im* (40 tokens), *’ere* (4 tokens) and *’ed* (head); on the whole the rule is applied to 6% of the Creole words.

As well as in *Small Island*, the novel by Zadie Smith contains Creole-specific spelling, stressing the uniqueness of the Creole culture: a vowel change from /o/ to /a/ and the insertion of an initial <h>. The first rule concerns the standard English low back vowel in words like *’lot*’ and *’hot*’, which in Jamaican Creole becomes /a/. In fact, Jamaican Creole has only the vowel /a/ representing both the sounds of [o] and [ɔ]. This vowel quality change is marked in both novels, though much more in *White Teeth* where it is applied for the negation form *’not*’ in two alternative spellings – *nah* or *nat* – as well as in words such as *marnin*’ (morning), *barn* (born) and in the Creole word *bambaclaat*. A variant of the same word, *ras clot*, is also included in *Small Island*, but without the vowel change. However, in some cases, the <o> of the standard form is respelled with a <u> and not <a>, as in the words *nuttin*’ (nothing), *anudder* (another), *mudder* or *mudda* (mother), *nuh* (now). Given that, in Jamaican Creole, the grapheme <o> is never pronounced as [o], authors feel free to modify the standard form as they please, either as <a>, which represents a phonological contrast between Jamaican Creole and English, or alternatively as <u>. The latter is an instance of eye-dialect and simply gives the impression that the speaker is speaking a nonstandard variety (Sebba 2007). This is much more frequent in *White Teeth*, demonstrating the variability of the spelling.

The second rule is associated with the character of Hortense, the only character using the initial velar fricative /h/ in *heducated* and in other words such as *hevil* and *hexplain*. In Jamaican Creole, the sound /h/ never appears in an initial position and this strategy is called *speaky-spoky* style; it is employed in performance poetry to undermine the sacredness of the standard English and to have a humorous effect for Creole speakers (Patrick 2004). However, in the case of Hortense – the only character to use this style, which will be unknown for most readers – the effect is almost ridiculous and emphasises the assumption that Creole speakers are illiterate and uneducated.

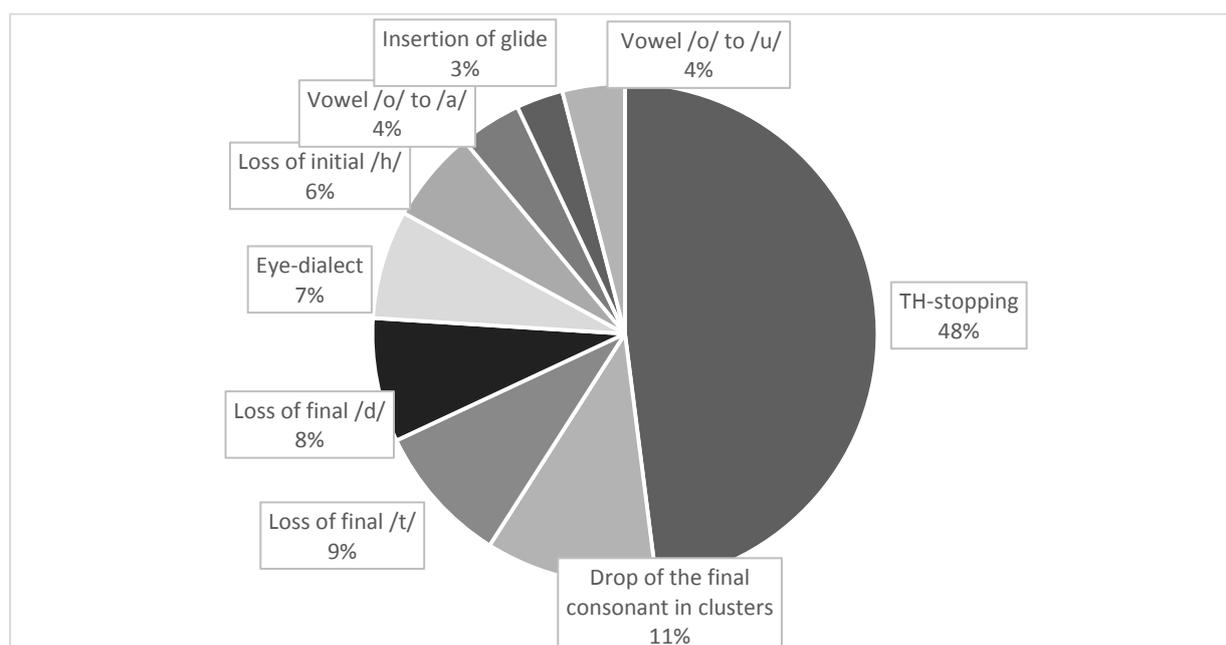


Fig. 2. Rate of phonological rules respelled in White Teeth

### 9. Qualitative analysis

I argue that writing languages with no codified written norms is ideologically much more complex than writing languages with a legitimate orthography and recognised spellings. It is the single writer, the single author, who decides if and how to represent the Creole language in written form, and thus her or his mental representations, mental models and attitudes come into play.

Consequently, orthographic choices and spelling variations can be seen on the one hand as traces of the social context of the production of a text, and on the other hand as cues for interpretation. Following this research idea, nonstandard spelling reflects the experiences and knowledge of the writer and are hints for the reader, how a text must be interpreted. Therefore, the ideology is pervasive, since ‘member’s resources’ (Fairclough 2001) are not only individual but are mostly common assumptions shared by a social group.

The function of Creole, or of any other nonstandard language, in a literary text may be approached from different perspectives. According to the concept of heteroglossia, a term coined by Bakhtin (1981), a work of fiction is a combination of the styles, languages and voices of its era, underlying the mimetic function of different language varieties in a novel. However, I argue that nonstandard languages in literary texts always have symbolic meaning rather than simply being tools or strategies to create fictional authenticity.

The quantitative analysis demonstrates that the majority of the respellings in both novels are simplifications of Creole words, and therefore they reinforce the perception of the nonstandard as a less elaborate and less complicated variety. The three different types of the loss of a consonant, which have, by far, the highest application rate in *Small Island*, reduce the phonological complexity of the Creole language and emphasise visually the incompleteness of Creole words, such as *wan*’, *jus*’, *an*’ and *tellin*’. Moreover, the rule of TH-stopping, despite its phonological foundation, is common in many other dialects and

vernaculars of English (Romaine 2005) and thus is not specifically Creole. Granted that, as British Creole is a contact variety between London English and Jamaican Creole, and thus more general vernacular forms are part of its linguistic pattern, texts seem to stress only these vernacular English elements and not the ones that are specifically Creole.

A further aspect that supports the representation of Creole as incomplete is the use of the apostrophe. In the analysis of the respellings, the apostrophe is extensively used by both authors to mark a loss of any sound from the standard English. It is also used when an initial sound is missing, for example, in words such as *'bout* (about), *'ed* (head), *'pon* (upon) and, curiously, in *Small Island* also in *everyt'ing* (everything), *t'ink* (think), *t'ieve* (thieve) and *not'in'* (nothing). This shows how the smallest unit of language and a single grapheme like the apostrophe has a very strong influence on how the language 'looks'.

In both novels, Creole speech and spelling index social identity, signalling the belonging of the speaker to different social groups. In *White Teeth*, three generations with Caribbean heritage are represented. Hortense, the grandmother, is Jamaican born and has moved to London in her adulthood. She is the only character speaking Creole throughout the novel – in code-switching with the standard forms – and it truly reflects the linguistic behaviour of British Creole speakers. In her speech, some of the most original respellings are made, such as the speaky-spoky style, the only case of the respelling *sekkle*, most of the Creole specific vocabulary (*pickney*, *maga*, *goggle-eye*) and much eye-dialect.

Hortense's daughter, Clara, is maybe the most fascinating one linguistically. She appears in the novel as a teenager and at first her speech is a mixture of London English and Jamaican Creole. Further into the novel, Clara breaks off with her mother and her Jamaican origins, and her progress in social status is achieved by the total replacement of Creole with standard English. A very original character, rich in her speech and intense in her story, becomes dull and vanishes away in the second part of the novel abandoning her 'Creoleness'.

Clara's daughter, Irie, the third generation with Caribbean heritage, does not speak a word of Creole throughout the novel, while even her friends of Bangladeshi origins do; for example, "‘‘Cha, man! Believe, I don't want to tax dat crap,’’ said Millat with the Jamaican accent that all kids, whatever their nationality, used to express scorn,' (Smith 2001:168). Therefore, the silence of Irie becomes meaningful, maybe signalling her desire to not belong to the Afro-Caribbean community.

Some patterns of character representation, in fact, are similar in both novels. Whereas Hortense in *White Teeth* is the older Jamaican lady speaking Creole, in *Small Island* this role is attributed to Miss Jewel, again a grandmother, and to a younger boy, Elwood, both living in Jamaica. Their speech contains most of the Creole vocabulary and the few innovative respellings such as *everyt'ing* (everything), *likkle* (little) and *Lawd* (Lord). Hence, there is this opposition between speakers living in Jamaica and those who have moved to London. Whereas in *White Teeth*, it is between those born in Jamaica and the speakers born in London (different generations).

Another opposition is that of class and, here, Creole is a marker of lower social status. In *Small Island*, the main two Caribbean characters, Hortense and Gilbert, are socially very ambitious and, in fact, their speech represents few respellings, especially in the case of Hortense. On the contrary, in both novels the minor characters' Creole speech hints at their social inferiority, as in the case of Miss Jewel, Elwood, and the twins Winston and Kenneth in *Small Island*. In Hortense's words, Kenneth '[...] is rough and uncouth. You hear his language?' (Levy 2004:369), a characterisation given by its use of 'basilectal' Creole. Similar to Gilbert's Creole speech, Kenneth also employs typical nonstandard features, but the author emphasises his uneducated speech by nonstandard spelling as well. Words such as *t'ief* and

*t'ink*, or more Creole-specific vocabulary such as *licking*, *likkle* and *a-smiling*, plus the use of repetition such as *fool-fool* convey Creole identity on the one hand and diminish the character's status on the other hand. As a matter of fact, Kenneth is opposed to his more educated and economically successful twin brother Winston, who does not employ Creole words. Looking at these examples, we can say that the excess of Creole elements outlines social class and status, and seems to be connected to the character having little ambition to improve his social position.

The minor characters in *White Teeth* include five speakers, from which three appear in the novel only once. The other two are Denzel and Clarence, two old Jamaican men sitting in the pub and playing dominos. They do not have any function in the story of the novel and are simply humorous interruptions to the main discourse. Their speech is represented in Creole spelling and contains some Creole-specific vocabulary such as 'What dat bambaclaat say?' (Smith 2001:187), where *bambaclaat* is a common Jamaican swear word, a compound of *bumba* (butt) and *claat* (cloth), and it is used in a derogatory way to refer to non-Caribbean people. In the case of Denzel and Clarence, Creole functions as a tool to add humour and to increase the multiplicity of voices in the novel. However, the employment of Creole in the speech of these minor characters also reinforces the traditional association of Creoles with uneducated speakers. Another similar example is the fictional person of Mad Mary, a homeless Jamaican woman who shouts in Creole in the streets 'Black man! Dem block you everywhere you turn!' (Smith 2001:177), where *dem* hints to the Creole accent. Again, the speaker is not a central character of the story, except for interrupting the evening of Samad and his young English lover, Poppy. Creole here is spoken by a mad person of lower social status and functions explicitly as a humorous intermission in the plot, in the meantime hiding stigmatisation and negative attitudes.

## 10. Conclusions

Despite being the smallest unit of language and often not considered to carry meaning, orthography and spelling choices can become powerful means to establish language independence, and to express language attitudes. Like every use of language, orthography is also seen as a social practice in a twofold relationship with the social context, forming the latter and, at the same time, being determined by it.

Many nonstandard languages are inclined to preserve their free oral nature rather than adopting a standardised written form. Speakers feel strongly about what their language 'looks like', stressing the emotional – and ideological – essence of orthographies. On the one hand, Caribbean English-lexicon Creoles reject the colonial culture and seek national identity, but, on the other hand, they are fixed in an ideological trap that perceives the English language as more prestigious.

Nevertheless, many writers employ Creole in their literary works as a strategy to, more or less overtly, contrast with traditional languages and discourses. The paper has analysed the Creole spelling used in two British contemporary novels by authors with a Caribbean heritage: Zadie Smith's *White Teeth* and Andrea Levy's *Small Island*.

Both novels choose the standard English orthography model on which they reshape Creole spelling, reinforcing the idea of Creoles as dependent from their lexifier. Moreover, this signals how both authors relate to a traditional belief of Creoles to be 'variants' of the lexifier

and they do not venture into a more phonemic representation of Creole. According to the CDA, the producer and the interpreter of a text are both a part of the process of discourse. Single orthographic choices mark Creole speech, but priority is given to the readability of the texts, where Creole almost becomes only an exotic flavour.

This is also accentuated by the frequent use of respellings relating to Black or urban speech in general, such as TH-stopping and loss of the final consonant. Creole-specific orthography is rarer; for example, Creole vocabulary, the use of eye-dialect and the speaky-spoky style. It is possible to say that both texts combine Creole-specific orthographic elements with more urban and common spellings familiar to the reader. Again, this reinforces the idea of Creole as Black urban speech depriving Creole of its specificity.

On the whole, both novels are cautious, almost conventional, in employing Creole. The symbolic and expressive power of nonstandard writing is not fully achieved and, even if the authors' intentions were different, the texts reinforce the idea of Creole as 'bad' English. Therefore, orthography as discourse strengthens the power relationships between Creole and the lexifier, and the linguistic and cultural hierarchy is maintained.

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## **Different aspectual properties in Mandarin light verb constructions:**

The continuity between diachrony and synchrony

Lu Lu

This study looks at the different aspectual encodings pertaining to three Mandarin Chinese light verb constructions *jiyu*, *yuyi* and *jiayi*, all generally meaning ‘give’. Assuming that light verbs typically follow the grammaticalisation path from independent lexical verbs to grammatical morphemes, I propose that the various aspectuality can be explained by the different grammaticalisation stages of the three verbs: the verb *jiayi* is the most grammaticalised followed by *yuyi* and *jiyu*. Their grammaticalisation status is evidenced by the usage-based data of independent and light verb constructions in a one-million-word Chinese corpus.

### *1. Light verb constructions*

The term ‘light verb’, coined by Jespersen (1954), refers to verbs such as *have* and *give* in complex predicate constructions like *have a bath* and *give a push*, where the main semantic content is provided not by the verb, but by the action nominal. Therefore, *have a bath* roughly means *bathe*, and *give a push* is similar to *push*. In Mandarin Chinese, verbs such as *jinxing* ‘carry out’ and *jiayi* ‘give’ are regarded as light verbs (e.g. Zhu 1982; Yin 1980, amongst many others), and they can be further categorised into DO and GIVE groups based on their verb senses. The former group consists of *jinxing* ‘do’, *zuo* ‘do’, and *gao* ‘do’, while it is the latter group, including *jiyu* ‘give’, *yuyi* ‘give’, and *jiayi* ‘give’, that is the focus of the current

paper<sup>1</sup>. In what follows, I will use a prototypical GIVE Mandarin light verb construction (henceforth, LVC) to illustrate the basic syntactic structures and the terminologies used in this paper.

In Contemporary Mandarin LVCs as shown in (1), the light verb *jiyu* is followed by the action nominal complement *guanzhu* ‘attention’, and the two items jointly form a complex predicate, which roughly has the same meaning as the corresponding verbal form of the action nominal, i.e., *guanzhu* ‘attend’. Also illustrated in (1), the undergoer argument *ruoxiao xuesheng* ‘vulnerable students’, introduced by the preposition *dui* ‘to’, is placed pre-verbally as an oblique argument. This is different from the prototypical word order in Mandarin Chinese where an undergoer argument is usually located at a postverbal position.

- (1) laoshi    dui    ruoxiao    xuesheng    jiyu-le    gengduo    guanzhu.  
 teacher   to   vulnerable   student   LV-ASP   more   attention  
 ‘Teachers paid more attention to vulnerable students.’

(ToRCH 2009-J)<sup>2</sup>

Whilst the three light verbs have very similar semantic content and can be used interchangeably in some cases (e.g., Diao 2004; Huang and Lin 2013), they differ in syntactic variants. For example, only the undergoer argument in *jiyu*-LVCs can be alternatively realised between the LV and the action nominal in Modern Chinese, as illustrated in (2), cf. (1) (see Section 3.3 in detail).

- (2) laoshi    jiyu-le    ruoxiao    xuesheng    gengduo    guanzhu.  
 teacher   LV-ASP   vulnerable   student   more   attention  
 ‘Teachers paid more attention to vulnerable students.’

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<sup>1</sup> While there are some subtle intra-group differences concerning these light verbs (for example, the genres they typically occur concerning *gao* and *jinxing*, and nuances in verb senses of *ji* and *yu*), this study will not go into detail regarding this matter. Instead, I only discuss the meaning shared by all light verbs in each group, namely, the verbs in the DO group mean ‘do’ and the ones in the GIVE group mean ‘give’.

<sup>2</sup> The sources of examples used in this article are identified in brackets immediately following the translation in the last line. Otherwise, they are conceived by the author and judged by the Mandarin native speakers, as exemplified by example (2). Note that as for the examples from the ToRCH 2009 Corpus, I specified the particular text where it was retrieved by indicating the text title after the dash, e.g. example (1) was retrieved from Text J in the corpus.

In addition to the close relation between complex predicates and the verbal equivalents of action nominals, LVCs, typologically speaking, are in close historical association with their ‘heavy’ or independent verb counterparts. It is claimed that light verbs have originated from their corresponding independent verbs (see Butt 2003, 2010; Anderson 2006, amongst many others). Whilst such claim is not without contention (cf. Butt and Lahiri 2002), this study holds that, as often posited, light verbs enter the grammaticalisation cline, and are prone to further reanalysis into an affix (e.g. Hopper and Traugott 1993; Hook 2001, amongst others), see the manifestation in (3).

- (3) independent verb > (vector verb/light verb) > auxiliary > clitic > affix  
(based on Hopper and Traugott 1993: 108)

Following this, the above three Mandarin light verbs are also believed to be developed from their independent verb counterparts meaning ‘give’ in Ancient Chinese<sup>3</sup>, and are prone to undergo further grammaticalisation<sup>4</sup>. In this paper, I will use their historical evolution to address the different aspectual properties of the three LVCs.

This article is structured as follows. After a brief outline of the four grammatical aspect markers in Mandarin Chinese, Section 2 will introduce the different aspectual features of the three Mandarin LVCs with corpus data. The theoretical foundation of the article—usage-based approach to the continuity between diachrony and synchrony—is presented in the first part of Section 3. Based on this, the grammaticalisation account of aspectual properties in LVCs is proposed in Section 3.2, followed by empirical evidence of each LVC from the synchronic ToRCH 2009 Corpus in Section 3.3. Section 4 provides some concluding remarks.

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<sup>3</sup> The periodisation in this study is as follows, following Sun (1996): *shanggu hanyu* ‘Old Chinese’ (500 B.C.-A.D. 200), *zhonggu hanyu* ‘Middle Chinese’ (201-1000), *jindai hanyu* ‘Early Mandarin’ (1001-1900), and *xiandai hanyu* ‘Modern mandarin’ (1901-present). Furthermore, I adopt ‘Ancient Chinese’ as a cover term to refer to both Old Chinese and Middle Chinese, and *dangdai hanyu* ‘Contemporary Chinese’, a subsection of Modern Chinese, to refer to the one from the year of 2000, especially those retrieved from the ToRCH 2009 in this study. Note that the periods described above intend to give a rough idea only, and do not imply a clean division; they are adopted simply for better illustration and discussion.

<sup>4</sup> Note that grammaticalisation is understood as a theory-neutral term in this paper, namely, following Kuryłowicz’s (1975: 52) classic definition, it is seen as a process ‘consisting in the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status, e.g. from a derivative formant to an inflectional one’ (see Narrog and Heine 2011, for an overview of grammaticalisation).

## 2. Different aspectual encodings in LVCs

This section uses corpus data to illustrate the encodings of grammatical aspect in the three LVCs, but before that, the four aspectual markers in Mandarin Chinese are sketched in the first section.

### 2.1. Grammatical aspect markers in Mandarin

It is widely acknowledged that there are four aspectual markers grammatically encoding aspect in Mandarin Chinese. Although a consensus is hardly ever reached regarding the aspectual meaning and function of the four grammatical aspects, there is a general agreement that imperfective markers *-zhe* and *zai-* do not entail a boundary (i.e. the presence or absence of a final temporal/spatial endpoint, following Jackendoff (1990)), whilst the beginning or final boundaries are grammatically marked by *-le* and *-guo*. Specifically, although both *-le* and *-guo* convey perfective sense, they have some slight difference. The marker *-guo* profiles experientiality, meaning that it refers to a completed and discontinued event prior to the speech time (see Chao 1968; Smith 1991/1997, 1994; Smith and Erbaugh 2005; Comrie 1976/1981, Soh 2015, amongst many others). The contrast between *-le* and *-guo* can be exemplified in (4).

- (4) a. tamen shang-ge yue qu-guo xianggang.  
 they last-CL month go -EXP Hong.Kong.  
 ‘Last month, they went to Hong Kong (they are no longer there).’

- b. tamen shang-ge yue qu-le xianggang.  
 they last-CL month go-PERF Hong.Kong.  
 ‘Last month, they went to Hong Kong (they may still be there).’ (Smith 1994:117)

As for the two imperfective markers, there seems to be more questions than what the consensus has reached. Nevertheless, they typically indicate continuous/durative and stable situations without regard to the endpoint (e.g. Li and Thompson 1981; Henne et al 1977; Dai 1997; Xiao and McEnery 2004; Soh 2015). The *-zhe* in example (5) highlights the internal stative interval of the event ‘hanging on the wall’, which may last for some period of time.

- (5) qiang shang gua zhe ji-zhang huar.  
 wall on hang STAT several-CL picture.  
 ‘Several pictures are hanging on the wall.’ (Smith 1991: 359)

The other imperfective marker *-zai*, although its status as an aspect marker is not as widely accepted as *-zhe*, prototypically highlights the progressive nature of an event in the middle of its happening. The event of ‘running’, for instance, is viewed as unbounded and on-going in (6).

- (6) ta zai paobu.  
 he PROG run  
 ‘He is running.’

Despite the fact that the above aspectual meaning is commonly acknowledged in the literature, the four grammatical aspect markers may be optional if the context contains enough information so that the addressee can easily work out the aspectuality.

## 2.2. *Different aspectual properties*

This study took a usage-based approach to the aspectuality of LVCs, and as such a corpus-based investigation was carried out. To gather a good representation of LVCs, the ToRCH 2009 Corpus<sup>5</sup> (Texts of Recent Chinese 2009) was used primarily. It is a well-balanced written corpus of one million words (1,703,635 Chinese characters, roughly equivalent to 1,087,619 words) in Mandarin Chinese. Patterned after the Brown Corpus (the first large-scale electronic corpus at the Brown University, see Francis and Kucera 1979) and created by Beijing Foreign Studies University, the ToRCH 2009 Corpus, which collects texts published in 2009 ( $\pm 1$  year), covers four broad text categories: press, general prose, learned writing, and fiction. The broad collection of data is meant to represent usages from all text types. Similar to the Brown corpus, the ToRCH 2009 Corpus also consists of 500 samples of approximately 2,000 words each. In addition to this representative and well-balanced corpus and in order to give an overall picture of aspectual properties, the larger CCL corpus (Centre of Chinese

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<sup>5</sup> This corpus can be accessed online via the link: <http://111.200.194.212/cqp> (accessed on 4 January, 2016).

Languages, Peking University)<sup>6</sup> (125 million Chinese word, as of July 2015) is used to complement the ToRCH 2009 Corpus.

As shown in the ToRCH 2009 Corpus, *jiyu*-LVCs can take the perfective aspect markers, such as *-le*, immediately after the light verb, whereas *jiayi*-LVCs cannot, see (7) and (8).

(7) laoshi dui ruoxiao xuesheng jiyu-le gengduo guanzhu.  
 teacher to vulnerable student LV-ASP more attention  
 ‘Teachers paid more attention to vulnerable students.’ (ToRCH 2009-J)

(8) weisheng bumen dui zhe-pi yaopin jiayi (\*le) yange guanli.  
 health department to this-batch medicine LV ASP strict regulation  
 ‘The health department strictly regulated this batch of medicines.’ (ToRCH 2009-H)

Such differences have been noted in Hu and Fan (1995), Diao (2004) and Kuo (2011). To account for this, Kuo proposed that *jiayi* is not a verb, but a preverbal affix in Mandarin Chinese. This analysis is further claimed to be applicable to other light verbs in the GIVE group, that is, *jiyu* ‘give’ and *yuyi* ‘give’. However, my investigation into the ToRCH 2009 Corpus, offers some counter-examples. Firstly, Kuo claimed that *jiayi* was a preverbal affix and this was supported by the fact that *jiayi* and the following complement could not be separated by numeral-classifier modification, as illustrated in (9).

(9) Zhangsan [dui zhe-ge anzi] jiayi (\*san-ge) diaocha  
 Zhangsan to this-CL case give three-CL investigate  
 ‘Zhangsan gave three investigation of this case.’ (Kuo 2011: 141)

Whilst there is no occurrence of *jiayi*-construction whose ‘complements’ (the term used in my study) are modified by numeral-classifiers, the corpus data does show some cases where the ‘action nominal’ (as termed in my study) can be modified by adjectives, see the adjectival modification *renzhen* ‘careful’ in (10).

(10) laoshi dui zhe-ge ti’an jiayi renzhen kaolü.  
 teacher to this-CL proposal LV careful consideration  
 ‘The teacher gave careful consideration to this proposal.’ (ToRCH 2009-G)

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<sup>6</sup> To access, please see [http://ccl.pku.edu.cn:8080/ccl\\_corpus/](http://ccl.pku.edu.cn:8080/ccl_corpus/) (accessed on 4 January, 2016). Note that this corpus, though much larger than the ToRCH 2009, is not representative or balanced in terms of text types, and the sampling does not seem to follow a strict procedure as the ToRCH (Jiajin Xu, personal communication).

This suggests that the ‘complement’ does contain some nominal properties; therefore, it is not appropriate to claim that the ‘complement’ is a main verb, and consequently treating the light verb as a preverbal affix does not seem proper. Hence, the light verb in this study is still argued to be a verb, which has morphological changes, and the complement is grammatically a noun.

Furthermore, the corpus data does not support the extension of Kuo’s proposal to the other two GIVE-light verbs, in particular to *jiyu*, as shown in Table 1. Whilst the ToRCH corpus investigation subscribes to the generalisation that aspectual markers cannot co-occur with *jiayi*, statistical results show that 19% (17/90) of *jiyu*-light verbs is attached to the aspect marker *-le*, and such property is also found once in *yuyi*-LVCs. The search from the larger CCL Corpus (125 million Chinese word) further demonstrates the aspectual properties concerning the three light verbs, see Table 1 wherein the statistics on the left of the bar in each cell shows the token frequency from the ToRCH 2009 Corpus, and the one on the right side comes from the CCL Corpus.

	<i>-le</i>		<i>-guo</i>		<i>-zhe</i>		<i>zai-</i>	
<i>jiyu</i>	17	4624	-	31	-	5	-	8
<i>yuyi</i>	1	119	-	-	-	-	-	3
<i>jiayi</i>	-	-	-	-	-	-	-	12

Table 1. The aspectual properties evidenced in the ToRCH 2009 and CCL corpora

From Table 1, the aspectual properties of the three light verbs can be generalised as follows: only perfective aspects, in particular *-le*, can occur with GIVE light verbs, and such aspectual encoding is largely preferred in *jiyu*-LVCs, rarely occurs in *yuyi*-LVCs, with no occurrence having been found in *jiayi*-LVCs. As for the imperfective markers, they seldom occur with any of the light verbs. In what follows, I will posit a constraint of aspectual encodings in Mandarin Chinese LVCs.

### 3. An insight from grammaticalisation

The above different aspectual encodings in GIVE-LVCs can be accounted for from the perspective of grammaticalisation, which concerns the historical development from an independent verb to a light verb. My view concerning language change is illustrated in Section 3.1, based on which the grammaticalisation proposal will be argued in Section 3.2. The evidence of corpus data concerning the syntactic development of the three LVCs will be analysed in the final section.

### 3.1. Theoretical foundation: The continuity between diachrony and synchrony

Usage-based grammarians (for instance, Lehmann 1985; Heine and Kuteva 2002, 2007, amongst others) hold that language changes as it is used, that is, language evolves through a natural process of daily use. Thus, change is not abrupt but continuous and gradual. Bybee (1998, 2007, 2010) believes that changes in language structures are not strictly bounded or fixed, but can be viewed as emergent, that is, being recreated based on experience or repetition, which is recorded in memory as linked to one another, in an on-going way. She clearly addresses the inseparability of synchronic analysis from diachronic change: ‘the diachronic dimension is important [...] because the diachrony determines a great deal about synchronic distributions and meanings of forms’ (e.g. Bybee 2010: 166, see also Bybee 1988; Goldberg and Ackerman 2001). As a result, it is possible to explain synchronic properties from the way they have developed historically. As exemplified in Bybee (2010), the reason that English negator *not* comes after (not before) the first auxiliary verb or copula verb (e.g. *do not, is not*) can be ascribed to grammaticalisation: *not* was derived from the negative morpheme *nā/nō* and a noun in direct object position *wiht* ‘someone, something’. At the time when VO was the typical word order in English, the negative element followed the verb<sup>7</sup>. This suggests that historical information can be passed down from earlier stages, as a result of which the newer linguistic formations will be influenced by its historical development, be it immediate or long-term.

The above assumption regarding the explanatory power of grammaticalisation is also substantiated by the studies on Ancient Chinese. Sun (1996) observes that, synchronically speaking, grammaticalisation can be used to account for the variations of a given linguistic item in synchronic data. In his investigation of *de* (得) in Modern Mandarin, he found that almost all the uses emerged from different historical periods survived into Modern Mandarin. For example, *de*, as an independent verb meaning ‘have’ in Modern Mandarin (e.g. *de gouloubing* ‘have rickets’) is actually derived from the original meaning of ‘obtain’ more than 2000 years ago (e.g. *de tianxia* ‘obtain the world’); the epistemic meaning of *de* as an affix in Modern Chinese (e.g. *kan-de-jian* look-DE<sub>1</sub>-see ‘can see’) is argued to be originated from the meaning of possibility as a verb in Ancient Chinese (e.g. *ji fu de cheng* several axe possible succeed ‘How many (strikes of) axes can do (it)?’). He further observes that the different grammatical statuses of *de* in Modern Mandarin (i.e., as a verb and an affix with different meanings) may be resulted from different stages of grammaticalisation (for more illustration, see Chapter 5, Sun (1996)).

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<sup>7</sup> Note that the property that the negative followed the verb applied to all verbs (including main finite verbs, auxiliaries, and copulars) then, but it was later restricted to auxiliaries and copulars only.

Common to all the aforementioned works is the assumption that the historical development of constructions can be used to account for their synchronic properties. If a specific inference often occurs with a construction, their representation will be entrenched over time, and eventually, they can be retrieved ‘automatically’ as a whole unit, making the meaning part of the construction (Bybee 2010: 109). Goldberg (2004: 17-18), in arguing that each construction must be motivated by usage, also appeals to grammaticalisation as one of the potential principles, in order to better account for form-meaning correspondences. As such, my following analysis builds on these foundations and is expected to support the explanatory adequacy of grammaticalisation.

### 3.2. *The grammaticalisation proposal*

Constructional grammarians believe that the aspectual information, rather than solely determined by the verb, is co-provided by the verb and the aspectual construction (for example, Michaelis 2004). This assumption provides a better account for the type shifting of lexical aspect, such as (11).

(11) I am living on Pearl Street.

(Michaelis 2004: 30)

The state verb *live* combines with the morphosyntax (in this case the progressive construction) typically licensed by an event verb. To reconcile this incompatibility where different values are assigned to a given attribute, a coercion mechanism is assumed, by which constructional requirements of progressive aspect are favoured over lexical constraints. This suggests that aspectual information is divided at the lexical and constructional levels, the latter of which wins the day.

Although this principle is largely applied to resolve the incompatibility in lexical aspect (a.k.a. *Aktionsart*), the underlying assumption is yet helpful for the reconciliation of grammatical aspect. Drawing upon this idea, I thus assume that the aspectual information of Mandarin LVCs is co-provided by the light verb and the construction. Specifically, I propose that aspectual properties encoded in the aspectual construction are represented in different degrees, depending on the grammaticalisation stage of the three GIVE-LVCs. As maintained in Section 1, the usual grammaticalisation path is ‘independent verb > grammatical morpheme (i.e. an aspectual marker in this case)’. Following this, the more grammaticalised a GIVE verb is, the more enriched the aspectual construction, which is grammaticalised from an independent verb, will be, and less likely it will resort to the verb to provide aspect information.

Based on the different aspectual properties set out in Section 2.2, *jiayi* is hypothesised to be most grammaticalised amongst the three GIVE light verbs. This means that its aspectual construction is assumed to include more grammatical information than other light verbs in the GIVE group. In other words, the grammatical information, which is the perfective aspect in this case, encoded in the aspectual construction of *jiayi* is sufficient to embody perfectivity in its own right. Therefore, the fixed perfective value internally conveyed in the *jiayi*-LVC makes it incompatible with any perfective aspect markers. On the contrary, in less grammaticalised verbs such as *jiyu*, the perfective aspectual information is not sufficiently-encoded in the aspectual construction, thus leading it to resort to the verb to provide some more aspectual values, in order to embody aspectual information when necessary. This will result in the morphological realisations, such as the presence of perfective markers *-le* and *-guo*, in *jiyu*-LVCs.

If the above hypothesis is correct, we would expect to find some evidence to support the different grammaticalisation stages of the three verbs, and this is the focus of the next section.

### 3.3. Empirical Evidence of grammaticalisation from corpus

A light verb is always assumed to be form identical to an independent verb in a language (e.g. Butt 2010). If light verbs, as we discussed in Section 1, evolve from their independent verb counterparts, it is likely that some syntactic and semantic properties that have close associations with (i.e. that are inherited from) their corresponding independent verbs will arise. Therefore, if a light verb still retains some uses as an independent verb, it is seen as not fully converted to a light verb, which, in other words, means that it is at an earlier stage (or lower degree) of grammaticalisation.

The three verbs *jiyu*, *yuyi*, and *jiayi*, when used as independent verbs, all mean ‘give’ or ‘cause to receive’ in their literal sense. Prototypically, the thing given is normally expressed by a typical noun, and the three GIVE verbs usually require a giver, a recipient, and a given in their semantic representation. The syntactic realisation of the three semantic roles regarding those verbs will be illustrated in the remainder of the section.

#### 3.3.1. *Jiyu*

In Modern (including Contemporary) Mandarin Chinese, a full realisation of the three participants in an independent verb construction can be found in *jiyu*-constructions in

particular; and all of these participants can be realised as core arguments (viz. subjects, direct objects and indirect objects).

Functioning independently, *jiyu* can be used in double object constructions. In example (12a), the recipient *xuesheng* ‘student’ and the theme *jihui* ‘opportunity’ are both realised as core arguments in the ditransitive structure.

- (12) a. *xuexiao jiyu xuesheng kua xueke, kua zhuanye de jihui.*  
 school give student cross discipline cross major DE opportunity  
 ‘The school gave students inter-disciplinary and inter-major opportunities.’ (ToRCH 2009-J)
- b. 追贈已故御史曹錫寶副都御史，依贈銜給予 其子蔭生。<sup>8</sup>  
*zhui zeng yigu yushi Cao Xibao fu duyushi,*  
 posthumously.award give late censor Cao Xibao vice censor-in-chief
- yi zeng xian jiyu qi zi yinsheng.*  
 according.to given title give 3RD son student.of.the.highest.education  
 ‘Posthumously awarded the late Censor Cao Xibao the Vice Censor-in-Chief, and according to the courtesy title system, his son was awarded to being admitted to the highest institution.’ (Early Mandarin, CCL Corpus)

The same syntactic structure can be found in Ancient Chinese when *jiyu* was used as an independent verb as well. In example (12b), the independent verb *jiyu* is followed by the indirect object *qi zi* ‘his son’ and the direct object *yinsheng*.

As a light verb, *jiyu* takes an action nominal, from which the predicational content can be seen, such as examples in (13) and (14). As illustrated at the very beginning of the paper, all the three participants in the event of giving can be realised in *jiyu*-LVCs, which bear some resemblance to its independent verb counterpart. They occur in ditransitive constituency as shown in (13) where the theme and the complement occupy the positions which are normally filled in by indirect and direct objects respectively in an independent verb construction, cf. (12).

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<sup>8</sup> To facilitate the reading of Classical Chinese (especially for readers who can understand Chinese characters), the original writing in Chinese will be provided, together with romanised spelling and glossing.

- (13) ta zai shenghuoshang jiyu ta wuweibuzhide zhaogu.  
 he on life jiyu her meticulous care  
 ‘He cared for her meticulously in life.’ (ToRCH 2009-F)

Additionally, *jiyu*, as a light verb, can also be used in oblique constructions. The theme *huanbao-de qiye* ‘environmentally-friendly companies’ in the following example (14), instead of being placed after the verb similar to the one in (13), is dislocated pre-verbally as an oblique argument introduced by the preposition *dui* ‘to’. This results in an OV word order, which is non-prototypical in Chinese.

- (14) guojia dui huanbao.de qiye jiyu zhichi.  
 country to environmental company jiyu support  
 ‘The country supported environmentally-friendly companies.’ (ToRCH 2009-H)

### 3.3.2. *Yuyi*

*Yuyi* is made up of two characters *yu* ‘give’ and *yi* ‘with’, which have evolved into a single unit *yuyi* over time. Between the two characters, only *yu* has a lexical contribution to the meaning of the whole word, and thus *yi* can be dropped in some cases, especially in Ancient Chinese<sup>9</sup>. The major syntactic difference between *yuyi* and *jiyu* lies in their ditransitive structure. This syntactic structure, regardless of *yuyi* acting as a light verb or an independent verb, is not attested in contemporary corpora, such as the ToRCH 2009. The conceived examples in (15a) and (15b) demonstrate that it is ungrammatical to use *yuyi* in double object constructions.

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<sup>9</sup>Note that, although *yuyi* and *yu* encode the same meaning, the former is largely preferred in modern Chinese; this also implies that *yu*, if used in modern Chinese, would give the text an archaic flavour. Since ditransitive structures can only occur in four-character idioms (or *chengyu* in Chinese) which contain *yu*, it is not surprising to find that expressions such as (i) acquire an archaic reading.

- (i) yu ren koushi  
 give people cause.for.gossip  
 ‘give people the cause for gossip’

As for *yuyi* as a whole unit, it cannot be used in the double object structure, see the following illustration in the body part.

(15) a. \*xuexiao yuyi wu xuewei zhe zhengshu.  
 school give no degree people certificate  
 ‘The school give no degree holder certificates.’

b. \*ben wen yuyi kaocha gai xianxiang.  
 this paper yuyi examine this phenomenon  
 ‘This paper examined this phenomenon.’

c. 其身之不能定，焉能予人之邑！

qi shen zhi buneng ding, yan neng yu ren zhi yi!  
 3RD body PTC cannot save PTC can give people PTC fief

‘His own life cannot be saved; how on earth can he give others fief! (Old Chinese, CCL Corpus)

However, the ditransitive syntactic structure was available in Ancient Chinese. In (15c), the indirect object *ren* ‘people’ and the direct object *cai* ‘fief’ immediately follow the verb *yu*.

Similar to *jiyu*, the verb *yuyi*, when in an LVC, can realise the theme role, for instance *gai xianxiang* ‘this phenomenon’ in (16), as an oblique argument.

(16) ben wen dui gai xianxiang yuyi kaocha.  
 this paper to this phenomenon yuyi examine  
 ‘This paper examined this phenomenon. (lit. This paper gave an examination to this phenomenon.’ (ToRCH 2009-D)

### 3.3.3. *Jiayi*<sup>10</sup>

The syntactic contexts of *jiayi*, however, are even more restricted. In Contemporary Mandarin Chinese, *jiayi* can, by no means, function as an independent verb to take a genuine noun. This use, however, is readily available in Ancient Chinese. Similar to *yuyi*, *jiayi* is also composed

<sup>10</sup> It is interesting to note that, *jiayi*, whilst on the one hand, narrowing its syntactic contexts over the course of time (see the rest of this section), yet on the other hand, diachronically (in the Eastern Han or the Latter Han Dynasty (25-220 AD) as per Liu (2011)) develops another functional category: a conjunction meaning ‘in addition’, which is still in use to date. Such use can be found in both contemporary and Classical Chinese. However, this paper will only analyse *jiayi* as a verb, leaving the conjunction use to a further study.

of two characters, *jia* ‘add’ and *yi* ‘with’, which integrate into one word *jiayi* over long course of evolution<sup>11</sup>.

In Ancient Chinese, *jia* can be used independently as a verb. In the Ancient Chinese subsection of the CCL Corpus, I found *jia*, as a full verb, occurring in both double object and oblique constructions. In example (17a), *jia* (independent verb) is directly followed by *bing* ‘military force’ and *wo* ‘me’ in the ditransitive construction; and the oblique construction of *jia* is shown in the two clauses in (17b). Although the givee role *wo* ‘me’ precedes the given in the first half the sentence, and that the givee argument *ren* ‘people’ follows the given role in the second half of (17b), the two givee arguments, introduced by the preposition *yu* ‘on/to’, are both demoted to oblique positions in the Ancient Chinese sentence.

(17) a. 诸侯皆贺，吾往贺而独不得通，此必加兵我，为之奈何？

zhuhou jie he, wu wang he er du bude tong,  
duke all congratulate I go congratulate but only not receive

ci bi jia bing wo, wei zhi naihe?  
this must add military.force me to 3RD what.to.do

‘Other dukes all congratulated (him), so did I, but he did not receive me. This means that he must be going to dispatch troops on me. What am I going to do?’ (Ancient Chinese, CCL corpus)

b. 子贡言我不欲人加于我之事，我亦不欲此加之于人。

zigong yan wo bu yu ren jia yu wo zhi shi,  
Zigong said I not want people add on me DE thing

wo yi bu yu ci jia zhi yu ren  
I also not want this add 3RD on people

‘Zigong said, the thing that I do not want other people to impose on me, I also would not like it to be imposed on others.’ (Ancient Chinese, CCL corpus)

Nevertheless, the above constructions become obsolete, and the undergoer argument has to be fronted as an oblique object in Modern Chinese in *jiayi* (light verb) constructions. This is exemplified in (18), wherein the theme *zheyi lilun* ‘this theory’ is displaced in front of the light verb *jiayi*.

<sup>11</sup> The details on how *jia* ‘add’ and *yi* ‘with’ were fused into a single word *jiayi* are beyond the scope of the paper; readers are advised to see Liu (2011) for more.

- (18) yantaohui dui zhe yi lilun jiayi shenshi.  
 seminar to this one theory jiayi examine  
 ‘The seminar examined this theory.’

(ToRCH 2009-C)

## 3.3.4. Grammaticalisation stages

I have so far outlined the syntactic development of the three light verb constructions from a historical perspective. The tokens of the above syntactic structures found in the ToRCH 2009 Corpus are summarised in Table 2 below, followed by corresponding instantiations. In Table 2, structure (a) of independent verb constructions can only be found in the contemporary *jiyu* construction, whereas such structure, as illustrated from Sections 3.3.1 to 3.3.3, was readily available in Ancient Mandarin across all the three verbs.

	a. IV+IO+DO	b. LV+IO+AN	c. OBL+LV+AN	d. LV+AN	Total
<i>jiyu</i>	32	13	34	30	109
<i>yuyi</i>	1	0	19	47	67
<i>jiayi</i>	0	0	23	45	68

(IV: independent verb; AN: action nominal; IO: indirect object; DO: direct object)

Table 2. Tokens of different syntactic structures concerning each GIVE verb in ToRCH 2009

Instantiations (all retrieved from the ToRCH 2009 Corpus):

- a. ta [jiyu]<sub>IV</sub> le [wo]<sub>DO</sub> [rensheng zhong gengwei baoguide jingyan]<sub>IO</sub>  
 he give PERF me life in more precious experience  
 ‘He gave me more precious experience in life.’

- b. ta zai shenghuoshang [jiyu]<sub>LV</sub> [ta]<sub>IO</sub> [wuweibuzhide zhaogu]<sub>AN</sub>.  
 he on life LV her meticulous care  
 ‘He cared for her meticulously in life.’

- c. ta [dui zhe yi zuofa]<sub>OBL</sub> [jiyu]<sub>LV</sub> [chongfen kending]<sub>AN</sub>.  
 he to this one practice LV adequate confirmation  
 ‘He adequately confirmed this practice.’

- d. ri mei ye [jiyu]<sub>LV</sub> le [zugou guanzhu]<sub>AN</sub>.  
 Japanese media also LV PERF enough attention  
 ‘Japanese media also paid enough attention (to this).’

Interestingly, structures (b) and (a) are intimately connected. From a syntactic perspective, the structures in (a) and (b), apart from the light verb occupying the position that is normally used to accommodate an independent verb, remain the same. Semantically, the meaning spreads from the original notion of physical transfer in (a) to the transfer of abstract things, such as ‘care’, in a more general sense, exemplified in (b). This pattern nicely parallels with the model of extension (a context-induced reinterpretation of grammaticalisation) proposed in Heine and Kuteva (2007). The model suggests that the transition from a less grammatical meaning to a more grammatical meaning does not happen abruptly, but involves some intermediate stages. According to Heine and Kuteva (2007), grammaticalisation usually occurs in four different stages: from the source stage (stage I), to a new context triggering a new meaning (stage II), then to background an existing meaning (stage III), and finally to be grammaticalised to the target manifest (Stage IV). As such, structure (b) can be seen as a new context that triggers new meanings (namely, the bleaching of *jiyu*).

Corpus data shows that, in structure (b), only pronouns can fill in the IO position. This is because IO sits in the middle of the sentence (i.e., between the bleached *jiyu* and the action nominal complement), the structure of which is not suitable for newly-introduced information to get prominence (see the Chinese ‘end-focus principle’ in Ho (1993) and Zhang (1994)). Such incompatibility further motivates the re-structuring of the extant double object LVC (i.e. structure b). Therefore, a peripheral argument—oblique—is introduced and placed in front of the verb *jiyu* to gain pragmatic prominence, thus giving rise to the structure (c). This structure grew in popularity and finally, in structure (d), the theme role is not obligatorily required in the LVC, which makes ‘*jiyu* + AN complement’ behave more like a single constituent. The diagnostic tests in (19) demonstrate that the complement *guanzhu* ‘pay attention to’ cannot be separated from the light verb *jiyu*.

- (19) a. faguo meiti dui zhe-ci huiyi jiyu le guanzhu,  
 French media to this-CL conference LV PERF care.about  
 riben meiti ye jiyu le \*(guanzhu).  
 Japanese media too LV PERF care.about  
 ‘French media have cared about this conference; Japanese media have cared about it too.’
- b. faguo meiti dui zhe-ci huiyi jiyu le guanzhu,  
 French media to this-CL conference LV PERF care.about  
 riben meiti ye shi.  
 Japanese media too so  
 ‘French media have cared about this conference, so have Japanese media.’

As we can see, the transition from (a) to (d) implies semantic generalisation, whereby new context entails more general meaning. This is, as observed in Heine and Kuteva (2007), one of the important factors that are responsible for grammaticalisation. However, as for the other two verbs *yuyi* and *jiayi*, they both have lost lexical content to a great extent that their contemporary syntactic context mostly favours the last two structures in Table 2. This implies that *yuyi* and *jiayi* are at a later stage of grammaticalisation, compared to *jiyu*. In other words, *yuyi* and *jiayi* in particular are more grammaticalised than *jiyu*.

The syntactic choices in Table 2 can be converted to percentages in Table 3, which gives a straightforward view to grammaticalisation stages concerning the three verbs: *jiyu* is at the earlier stage of grammaticalisation compared with *yuyi*, and in particular *jiayi*.

Lexeme	Independent verb construction	Light verb construction	Grammatical morpheme
<i>jiyu</i>	29.4%	70.6%	→
<i>yuyi</i>	1.5%	98.5%	
<i>jiayi</i>	-	100%	

Table 3. The percentage concerning the distribution of light verbs and full verbs

Tables 2 and 3 demonstrate that the three GIVE verbs have diversified their uses with different grammatical status. This also nicely reflects the effects of the layering principle of grammaticalisation, as argued in Hopper (1991: 22):

‘Within a broad functional domain, new layers are continually emerging. As this happens, the older layers are not necessarily discarded, but may remain to coexist with and interact with new layers’.

The earlier/latter stages of grammaticalisation are, interestingly, compatible with the realisation/non-realisation of the aspect marker *-le*. Following constructional grammarians’ idea (such as Michaelis 2004 and Goldberg and Jackendoff 2004, see Section 3.2 for more), I believe that the aspectual information is co-provided by the verb and the aspectual construction in all GIVE light verbs. Following this, I propose that aspectual properties encoded in the aspectual construction are represented in different degrees in terms of the three GIVE verbs, depending on the grammaticalisation stage. Since the usual grammaticalisation path is ‘independent verb > grammatical morpheme (i.e. aspectual marker in this case)’, the more grammaticalised a GIVE verb is, the more enriched the aspectual construction will be (grammaticalised from an independent verb), and less likely it will resort to the verb to provide aspect information.

Take the most grammaticalised *jiayi* as an example. Since it is the farthest along the grammaticalisation cline amongst the three verbs, we assume that its aspectual construction will include more grammatical information than the other two GIVE light verbs. In other words, the grammatical information of perfectivity encoded in the aspectual construction of *jiayi* is sufficient to embody grammatical aspect on its own right. Therefore, the aspectual value internally conveyed in the *jiayi*-LVC makes it incompatible with any aspectual markers.

On the contrary, in less grammaticalised verbs such as *jiyu*, the aspectual information is not sufficiently encoded in the aspectual construction, thus leading it to resort to the verb to provide some more aspectual values, in order to embody aspectual information when necessary. This will result in the morphological realisations, such as the presence of aspectual markers *-le* and *-guo*, in *jiyu* light verb constructions. Recall Kuo's proposal that *jiayi*, which is termed as a light verb in my study, is analysed as a preverbal affix. Whilst her proposal has been challenged in Section 2.2, the idea, to some extent, supports the grammaticalised status of *jiayi*, which is seen as the one closest to the grammatical end (i.e. as a grammatical affix) on the grammaticalisation continuum.

#### 4. Conclusion

This study focuses on aspectual properties of the three LVCs in Mandarin Chinese involving the verbs *jiyu*, *yuyi* and *jiayi*, all meaning 'give' in a general sense. These verbs combine with an action nominal to form a complex predicate, but unlike *jiyu* and *yuyi*, the *jiayi*-LVC is incompatible with any aspectual markers (see also Diao 2004; Kuo 2011). Assuming that light verbs typically follow the grammaticalisation path from independent verbs to grammatical morphemes, I propose that the verb *jiayi* has completely lost its function as an independent verb, found in Old Chinese, and has developed an inherent perfective meaning. It is thus expected that the construction expresses fixed aspectual value in itself, and therefore is not compatible with other aspectual markers. In contrast, the corpus data shows that *jiyu*, in addition to functioning as a light verb, can be freely used as an independent verb in Contemporary Mandarin, whilst *yuyi* can only be used lexically in fixed expressions of Contemporary Mandarin. In other words, the three GIVE verbs are at different stages of grammaticalisation. The verb *jiayi* is the most grammaticalised item. On the contrary, *jiyu* and *yuyi* have not fully grammaticalised as aspectual morphemes, so aspectuality has to be encoded by means of aspectual markers such as the perfective markers *-le* and *-guo*. This analysis argues for the influence of different degrees of grammaticalisation on the synchronic variations of aspectual encodings in Mandarin GIVE LVCs, and supports the idea that

‘diachrony determines a great deal about synchronic distributions and meanings of forms’ (Bybee 2010: 166; see also Goldberg and Ackerman 2001).

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### *Abbreviations*

3RD	Third person
ASP	Aspect marker
CL	Classifier
DE	Pre-nominal modification marker, written as 的 in Chinese
DE <sub>1</sub>	Epistemic marker between a verb and its complement, written as 得 in Chinese
EXP	Experiential marker
LV	Light verb
PERF	Perfective marker
PROG	Progressive marker
PTC	Particle

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## Predication under control

The case of Polish

Patrick Lindert

This paper is concerned with case properties of predicative adjectives in control. In subject control, adjectives appear either in agreeing case or instrumental; in object control only the latter is licensed. It is shown that control embeds predication and therefore follows simple predicational rules. In Polish, predicative nouns appear in instrumental, whereas predicative adjectives agree with their subjects. It is thus argued that only agreeing adjectives in control constitute APs, whereas instrumental adjectives in control are actually modifiers of DPs whose head noun can be optionally elided.

### 1. Introduction

This paper is concerned with the case properties of predicative adjectives in Polish control constructions as in (1).

- (1) a. Jan próbuje być miły / miły-m  
Jan.NOM tries be.INF nice.NOM / nice-INST  
'Jan tries to be nice.'
- b. Piotr kazał Tomk-owi być miły-m / \*mił-emu  
Peter.NOM ordered Tom-DAT be.INF nice-INST / nice-DAT  
'Peter ordered Tom to be nice.'
- (Przepiórkowski 2004b:104)

In subject control (1a), the adjective *miły* 'nice' can surface with the nominative, thus matching the case of the controller *Jan*, or it can appear with the instrumental. In object control (1b), the case on the adjective must be instrumental, it cannot match the controller's case, in this case, dative. It is nothing about the lexical properties of the dative in (1b) though that blocks case transmission, as with structural accusative objects, we observe the same phenomenon (2).

- (2) Piotr uczył synk-a być grzeczny-m / \*grzecz-n-ego  
Peter.NOM taught son-ACC be.INF polite-INST / polite-ACC  
'Peter taught his son to be polite.'
- (Przepiórkowski 2004b:104)

Previous accounts (Przepiórkowski 1999, 2004b; Bondaruk 2004; Witkoś 2008, 2010) have proposed different analyses for the data in (1) and (2). Przepiórkowski (2004b) has developed an analysis within the HPSG framework. Translating his ideas into a transformational framework, one would have to say that subject control is the result of movement, whereas object control is not, but rather the assignment of null case (Chomsky and Lasnik 1993), morphologically realized as instrumental. Bondaruk (2004) applies Landau (2000)'s Agree model to the Polish data and Witkoś (2008, 2010) has developed a movement analysis of control in the spirit of Hornstein (1999). In his analysis, subject control is derived via movement, while in object control this is not possible due to the CP layer acting as a phase. Diverse as the analyses are, what they have in common is that they treat the instrumental in (1b) and (2) as a special case. Witkoś explicitly calls it a default case, Bondaruk (2004) the elsewhere case. Przepiórkowski assumes a mechanism where 'agreeing case and instrumental' are both treated as the same in the syntax. It is then extra-syntactic information that makes either both options licit, or excludes one of the cases. Furthermore, in (1a) instrumental is either judged ungrammatical (Bondaruk 2004), substandard or borderline ungrammatical (Witkoś 2008, 2010). Nearly all of my informants report that instrumental marking is perfectly fine, and thus I aim to account for both case variations.

In this paper, I will argue against the notion of a default instrumental as independent tests show that it is nominative that is default in Polish (Lindert 2016). Additionally, some analyses predict the use of the instrumental in subject control (1a) to be ungrammatical (Bondaruk 2004) or only possible in some instances of control where a lexical C head is realized (Witkoś 2008). Furthermore, I will demonstrate that no specific control mechanism is necessary to explain the (apparent) case mismatch, but that they follow from independent characteristics of the language itself. To be more precise, the different case mechanisms for subject control do not constitute a peculiar control characteristic, but are rather the result of applying the rules of predication. The analysis for object control is more elaborate and presents rules of predication as well as specific control properties of the language that result in the unavailability of agreeing case on the adjective.

This paper is structured as follows: In section 2, I will discuss the different usages of the instrumental case in Polish and show how some of the usages can be unified. In section 3, I will take a closer look at predication and in section 4 at control. Section 5 concludes.

## 2. Usage of instrumental case

Before turning to the analysis of predication and control, let me briefly review the different usages of the instrumental in Polish, as this case is available in the control data discussed in the literature. There seem to be multiple usages of the instrumental case, and the treatments of these are not uniform. In this section, I will show how, at least, two of these (the predicational and the default one) can be unified syntactically.

### 2.1 Instrumental as lexical case

The occurrences in (3) show instances of the instrumental as lexical case.

- (3) a. Kasia idzie do szkoł-y z brat-em  
 Kate.NOM goes to school-GEN with brother-INST  
 'Kate is going to school with her brother.'

- b. Jan kieruje fabryk-ą  
 Jan.NOM manages factory-INST  
 ‘John manages (a/the) factory.’ (Przepiórkowski 1999:101)

In (3a) the preposition *z* ‘with’ governs the instrumental case thus it appears on *brat* ‘brother’. In (3b) the verb *kierować* ‘to manage’ assigns instrumental to its complement as well. The instrumental marking in (3a) is thus considered to be lexical. In the literature, there is some discussion whether the instrumental marking in (3b) is indeed lexical and not structural (Willim 1990; Tajsner 1990; Przepiórkowski 1999). I will follow Przepiórkowski (1999) in that it is indeed lexical. He offers two tests that show that the cases are of lexical and not structural nature, namely by applying the genitive of negation (GoN) (4a) and nominalizations (4b).

- (4) a. Piotr nie kieruje fabryk-ą / \*fabryk-i  
 Peter.NOM NEG manages company-INST / company-GEN  
 ‘Peter doesn’t run a company.’  
 b. Kierowanie fabryk-ą / \*fabryk-i  
 manage.GRND company-INST / company-GEN  
 ‘The leading of a company’

It has been shown that the GoN targets structurally case marked objects, and never lexically case marked objects like the dative. This can be seen in (4a). The verb *kierować* ‘to manage’ takes an instrumental object. When the phrase is negated, the case of the object does not change into genitive (4a). This indicates that instrumental is indeed lexical, as structural cases change into genitive under the GoN.<sup>1</sup> Nominalizations work in the same way. If a predicate is nominalized, its structurally case marked object turns genitive. In (4b), the instrumental is kept after the predicate has been nominalized showing that instrumental is unaffected by this structural change (for more data and discussion, see Przepiórkowski 1999).<sup>2</sup>

## 2.2 Instrumental as predicative case

Instrumental is also very prominent in predication structures as in (5).

- (5) a. Piotr jest pilot-em / aktor-em / lekarz-em  
 Peter.NOM is pilot-INST / actor-INST / doctor-INST

<sup>1</sup> In order to see how a licit example of the GoN looks like, please consider the following data.

- (i) Kasia pije kaw-ę  
 Kate.NOM drinks coffee-ACC  
 ‘Kate drinks coffee.’  
 (ii) Kasia nie pije kaw-y / \*kaw-ę  
 Kate.NOM NEG drinks coffee-GEN / coffee-ACC  
 ‘Kate does not drink coffee.’

In (i), the verb *pić* ‘drink’ marks its object with structural accusative. Once the structure is negated (ii), the object surfaces with genitive case marking.

<sup>2</sup> I do not use the passivization tests here for teasing apart lexical from structural cases, as Przepiórkowski (1999) has shown that in Polish there are many examples of lexically dative marked objects that turn nominative under passivization. The conclusion is that, at least for Polish, the passivization test is not a good indicator for the structural/lexical case split.

- b. \*Piotr jest pilot / aktor / lekarz  
 Peter.NOM is pilot.NOM / actor.NOM / doctor.NOM  
 ‘Peter is a pilot / actor / doctor.’

In (5a), we see that a predicative noun can only appear in instrumental marking. Nominative is not possible in the same environment (5b). In older stages of Polish, the nominative was still licit in parallel to the instrumental option. It has been argued that back then the instrumental signalled stage-level readings whereas the nominative was used for individual-level readings (Moser 1993). This distinction is lost in Modern Polish; the paradigm in (5) probably marks the end of a diachronic change in Modern Polish, as all nouns, even those that only have individual-level readings (like *córka* ‘daughter’, *syn* ‘son’ or a nationality in general) can only appear in instrumental. In other Slavic languages, the development of predication seems to be going on. In Russian, both instrumental and nominative are fine in non-present tenses<sup>3</sup> and the different interpretations arising from the case markings have been attributed to stage vs. individual level readings (Jakobson 1971), part/whole readings (Timberlake 1986) or topic readings (Geist 1999). In Czech, both forms are fine as well. Moser (1993) offers a more detailed and thorough historical overview of case assignment and predication in the Slavic languages. Nevertheless, we still need to account for the instrumental marking in predication. One could assume that the instrumental marking in (5) is lexical being assigned by the copula *być* ‘be’. However, this would then falsely predict that adjectival predicates would also appear in instrumental, when they actually do not (6).

- (6) Piotr jest fajny / bogaty / mądry  
 Peter.NOM is great.NOM / rich.NOM / smart.NOM  
 ‘Peter is great / rich / smart.’

One could assume that there are two copulas *być* ‘be’ in Polish; one that assigns instrumental as in (5) and one that either assigns no case or nominative as in (6).<sup>4</sup>

However, this is not a very desirable conclusion, and it would be close to saying that these two elements are two distinct elements in the lexicon that just happen accidentally to have the same phonological and semantic structure. In the literature, it has been assumed that a functional projection is responsible for the instrumental marking in (5). This projection has either been called PredP (Franks 2015; Bondaruk 2013; Bailyn 2001; Bowers 1993) or PhiP (Citko 2008). The source for nominative in (6) is assumed to be finite T with the PredP being defective (Bondaruk 2013) in these cases and therefore incapable of assigning instrumental. Thus, it is assumed that a PredP is always projected when there is predication, however, when there is no instrumental, the PredP is defective in a way. This approach is not unproblematic. It is, for example, not clear how a predication relation can be established with the help of a defective PredP. For criticism of this approach see Pitsch (2014) and Matushansky (to appear). The precise nature of this projection is not too relevant at this point, what is, is that one assumes a functional, case-assigning projection in the structure, and not the copula to be a case assigner.

<sup>3</sup> In present tense only nominative is licit. It has been argued that this is due to the fact that Modern Russian lacks an overt copula in the present tense.

(i) Sergej gid / \*gid-om.  
 Sergej.NOM ØCOP guide.NOM / guide-INST  
 ‘Sergej is a guide.’

(Geist 2008:4)

<sup>4</sup> See Geist (1999) for a proposal along these lines for Russian.

Whether predicational case falls into structural or lexical case occurrences has only been scarcely addressed, and to my knowledge, the tests by Przepiórkowski (1999) were not applied to these structures. In Lindert (2016), I came to the following conclusion:

- (7) Bycie lekarz-em / \*lekarz-a *Nominalization*  
 be.GRND doctor-INST/ doctor-GEN  
 ‘Being a doctor’
- (8) Piotr nie jest lekarz-em / \*lekarz-a *Genitive of Negation*  
 Peter.NOM NEG is doctor-INST / doctor-GEN  
 ‘Peter is not a doctor.’

In (7), we see that once *być* ‘be’ is nominalized, the complement stays in instrumental and does not turn genitive as structurally cased marked complements do. In (8), we see that once the phrase is negated, the object still keeps instrumental marking and does not change into genitive under the GoN. The results strongly suggest that predicative case does behave like a lexical case. This poses a dilemma, as lexical cases are usually assigned by lexical elements in the structure. In our examples, it is only the copula that could assign lexical case. This does not seem very likely as the copula does not assign instrumental to adjectival complements. However, in recent literature case assignment by a lexical element and the lexical element itself have been severed. McFadden (2004) assumes, for example, that (some) occurrences of the dative in German are assigned by a functional projection that is situated atop of the VP ( $\nu$ P for him). In sum, the apparent dilemma is not dramatic, as one could assume that the functional projection in predication (PredP, PhiP or more generally FP) assigns lexical instrumental.<sup>5</sup>

### 2.3 Instrumental as default case

The instrumental as a default case has been argued to be visible in control constructions (Witkoś 2008; 2010; Przepiórkowski and Rosen 2005; Bondaruk 2004; Franks 2015).

- (9) Piotr marzy [żeby PRO być bogaty / bogaty-m]  
 Peter dreams so-that be.INF rich.NOM / rich-INST  
 ‘Peter dreams to be rich.’ (Witkoś 2008:265)
- (10) Kazałem mu być trzeźwy-m /\*trzeźw-emu  
 I.told him.DAT be.INF sober-INST / sober-DAT  
 ‘I told him to be sober.’ (Witkoś 2008:257)

In (9) with subject control instrumental appears as an option on the predicate. The possibility of instrumental has been attributed to the occurrence of a lexical C-head that blocks nominative case transmission from finite T into the non-finite clause (Witkoś 2008).<sup>6</sup> In (10),

<sup>5</sup> Dalmi (2005) has proposed that AgrSP and AgrOP could very well establish the predication relation as well, therefore she argues against Chomsky’s (1995) abolishment of the agreement phrases.

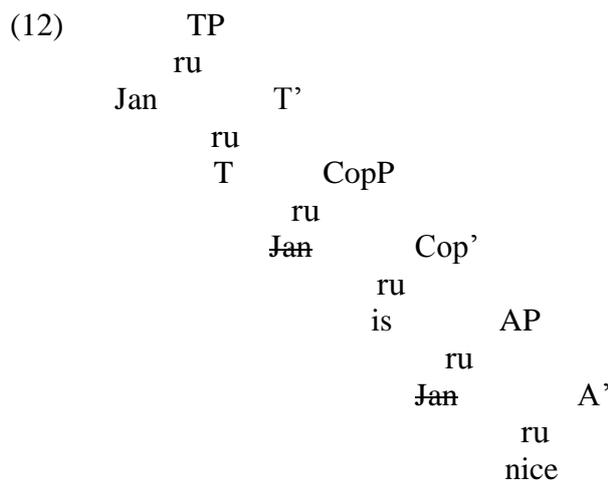
<sup>6</sup> It has been noted by Witkoś (2008) that nominative is also available for some speakers. He mentions that this has to do with individual speakers’ grammars. For some, the CP is a strong phase and therefore case transmission is blocked resulting in instrumental marking. For others, it is a weak phase thus allowing nominative to be transferred into the non-finite clause. This account becomes problematic once a native speaker allows both forms, which is the case with my informants and myself.

we see another case of object control where only instrumental is possible. No independent tests are offered to show that these occurrences are indeed of a default case nature. I will return to the data in the following sections and show that instrumental in the examples (9)-(10) is not a default case, but actually constitutes the predicational instrumental.

### 3. Predication revisited – structure and interpretation

Before turning to the pivotal control data, I will first take a step back and lay out an analysis for predication with nouns and adjectives.<sup>7</sup> In a further step, I will embed these structures in control to show that the apparent case mismatches are not surprising, quite the contrary, they are expected as they simply follow predicational rules. I will begin with predicative adjectives as in (11) where the adjective and its subject agree in case.

- (11) a. Jan            jest    miły  
          Jan.NOM    is       nice.NOM  
          ‘Jan is nice.’
- b. [TP Jan [<sub>CopP</sub> ~~Jan~~ jest [<sub>AP</sub> ~~Jan~~ miły]]]



The derivation runs as follows: the adjective *miły* ‘nice’ and the noun *Jan* are base-generated in the same phrase, here in an AP. Both share their phi-features, but there is no valuation of phi-features at this point of the derivation (Frampton and Gutmann 2000; Pesetsky and Torrego 2004) as the valuation is the result of agree with a functional projection. *Jan* moves up into Spec,Cop thus establishing a predication relation. I follow den Dikken (2006) in the assumption that a specific PredP is not needed, if a functional projection is already in the structure that can take over the job of a PredP. *Jan* further moves up to Spec,TP where phi-feature valuation takes place, and case is assigned as a by-product (Chomsky 2000, 2001; Landau 2008). Due to the chain created by the phi-feature valuation at the beginning of the derivation, the same phi-features are transmitted to the adjective, and as a by-product,

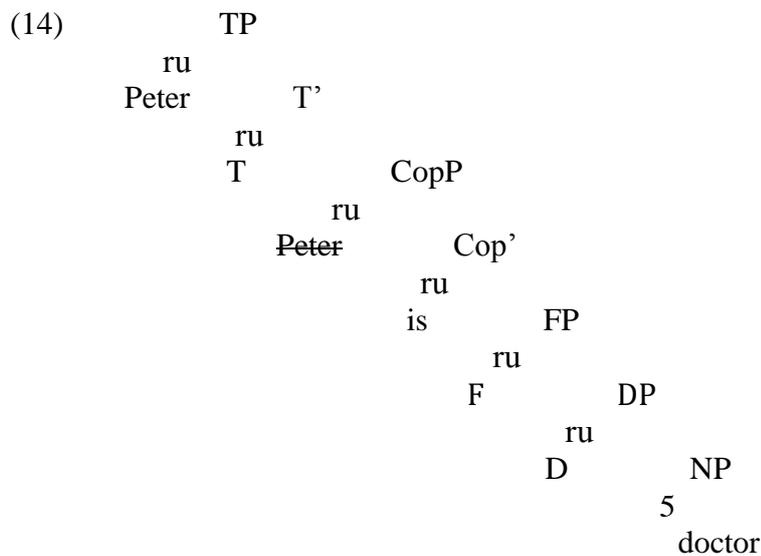
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<sup>7</sup> I am not going into predication involving prepositions here. This paper is concerned with case markings and their respective sources; PP predication will thus not shed more light onto this, as there, case is assigned by a lexical P.

nominative is also transmitted downward the tree. I will call this form of predication ‘AP Predication.’<sup>8</sup>

For predication with nouns, I assume a derivation with more structure, i.e. not the same structure as for AP Predication. Example (5a), repeated as (13a), would have the derivation in (13b) with the corresponding tree in (14).

- (13) a. Piotr            jest    lekarz-em  
          Peter.NOM    is     doctor-INST  
          ‘Peter is a doctor.’
- b. [TP Piotr [CopP ~~Piotr~~ jest [FP [DP lekarzem ]]]]



The derivation starts with *lekarz* ‘doctor’ being merged as a DP into the derivation. In contrast to AP predication the subject *Piotr* ‘Peter’ is not base-generated in the same phrase as its predicate. The next step is a functional projection, which I label FP to stay neutral with respect to existing theories. This FP assigns case to its complement; in the case of Polish it is instrumental. Then the CopP is projected with the copula and the subject in its specifier. It is at this point when the predication relation is established between the subject *Piotr* ‘Peter’ and the whole FP in the complement of the CopP. Then the TP is projected which assigns nominative to the subject. As phi-features have not been matched between *Piotr* ‘Peter’ and *lekarz* ‘doctor’ in the course of the derivation, there would be no reason for the nominal predicate to get case from finite T. In addition, the head of the FP would have already assigned case to its complement (Matushansky 2008, Stowell 1981).

The structure in (14) could seem stipulative as to the inclusion of a nameless FP. However, there are a couple of arguments in favour for this assumption.

The first, and most obvious, is case assignment. The instrumental case must come from somewhere. It cannot be default case, as the instrumental is not a default case in Polish (Lindert 2016).<sup>9</sup> This case can also not come from the copula due to its behaviour in AP predication where instrumental is not available. Whether lexical or structural in nature, there

<sup>8</sup> The argument made in this paper would not change, if one assumed a (defective) PredP in the structure.

<sup>9</sup> In Lindert (2016), I have applied Schütze’s (2001) default case tests to Polish. These included left dislocation, ellipsis, coordination, and modified pronouns; nominative appeared in all of these environments.

must be a case assigner in the structure. Some have labelled it PredP. I have intentionally stayed away from labelling this projection a PredP as then one needs to account for its absence, or different behaviour (Bondaruk 2013) in AP predication.<sup>10</sup>

The second argument would be of a semantic nature. Semantically, DPs cannot participate in predication due to their semantic structure in being saturated entities that do not need to participate in predication constructions. If the nominal predicate is indeed a DP in the syntax, the job of the FP might be to turn the saturated DP into a predicate making it able to participate in this construction. Then, in some languages, this ability to participate in predication is marked overtly with case. This is the picture in Polish, where the predicative DP always appears in instrumental. With this idea in mind, case assignment would be more of a by-product of turning a DP into a predicate.

However, do we have reasons to believe that nominal element in predication is really a DP, and not an NP in the syntax? Apart from the well-established DP hypothesis (Abney 1987), this analysis makes an interesting prediction concerning possessive phrases. Possessive phrases have been argued to be DPs in predication (Alexiadou et. al. 2007; Cardinaletti 1998). If we now embed a possessive phrase in predication, we get the following.

- (15) a. Piotr        jest    moi-m        najlepszy-m    przyjaciel-em  
          Peter.NOM is    my-INST    best-INST     friend-INST  
          ‘Peter is my best friend.’
- b. Piotr        jest    najlepszy-m    przyjaciel-em    Jank-a  
          Peter.NOM is    best-INST     friend-INST     John-GEN  
          ‘Peter is John’s best friend.’

In (15a), the possessive phrase *moj najlepszy przyjaciel* ‘my best friend’ must appear in instrumental. The same is true for (15b) where the possessive pronoun has been replaced by the genitive noun *Janek* ‘John’. The case must have a source (the FP) and as possessive phrases are located in the D-layer and can appear as predicates as in (15), there should be something in the structure that makes them predicates (the FP) and assigns case.

There is, however, still the question of whether nominal predicates have to appear in instrumental always, or whether we do find examples for the contrary. Indeed, it turns out that the generalization so far seems to be too strong.

- (16) Jesteś        świnia!  
          you.are    pig.NOM  
          ‘You are a swine!’ (Przepiórkowski2004b:106)

- (17) Stefan        jest    (świetny)        kierowca!  
          Stephan.NOM is    (wonderful.NOM)    driver.NOM  
          ‘Stephan is a wonderful driver.’ (Bogusławski 2001:104)

- (18) Jestem    professor

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<sup>10</sup> Matushanky (to appear) offers a number of arguments why there is no PredP at all showing that many supposedly solved problems by the introduction of PredP, did not actually solve those.

I.am professor.NOM  
 'I am a professor.'

(Bondaruk, p.c.)

In (16) the predicative noun *świnia* 'pig' may be used in nominative. One should mention that instrumental marking is fine here as well, and would most naturally be used if the addressed entity in (16) was an actual pig. However, the most natural reading for (16) is that the addressee is a human being. With this utterance, one does not want to say that the person is an actual pig, but rather that he or she behaves like one. So, the predicate in (16) has more adjectival properties as the reference is made to the characteristics of the animal. Swan (1993) has already made such an observation and stated that *be+instrumental* equals identification whereas *be+nominative* equals having the traits of something. To put it differently; the more adjective-like an element is, it will be agreeing nominative. The more noun-like an element is, it will appear in instrumental. The implicit assumption is thus that there is a continuum between nouns and adjectives. In (16) what looks like a full-fledged noun, is actually used as an adjective.

Example (17) has been attributed to a spontaneous, emotional utterance where predicative nominative nouns have been documented. This reading is strengthened by the adjective *świetny* 'wonderful' which is usually used in spontaneous, excited speech. This explanation might be true, but consider that in (17) the more dominant reading is that *Stefan* 'Stephen' is not a professional driver, but just happens to drive well when in such a situation. Therefore, the nominative can be explained by Swan's 1993s observation of noun- and adjective-like elements, namely that *Stefan* 'Stephen' has the characteristics of a good driver without necessarily being a professional driver himself.

The data in (18) show *professor* in nominative, contrary to the expected instrumental as well. Again, instrumental case in (18) is fine, and to some extent better. I suppose (18) is fine to some Polish speakers as one is not referring to the job, but rather to the title of professor. And it does indeed seem to be true that titles can be used, sometimes marginally, with nominative in predication (19). Professions that are not at the same time titles cannot be used in nominative (20).

(19) ?Jesteś prezydent  
 You.are president.NOM  
 'You are the/a president.'

(Przepiórkowski 1999:106)

(20) \*Jesteś aktor  
 You.are actor.NOM  
 'You are an actor.'

Apart from Swan's (1993) implementation, one could also assume that the predicates in (16)-(19) are not projected as DPs, but rather constitute NPs. If they are NPs, no FP would be projected to turn them into predicates, as NPs can freely participate in predication structures. If there is no FP, the prediction is that instrumental is not available either. This might solve the syntactic problem concerning the projection of adjective-like and noun-like elements. Here, instrumental would be assigned to DPs, whereas (restricted) nominative would indicate that the elements are projected as bare NPs making them closer to APs without having to call them adjective-like.

Bondaruk (2014) actually claims that a nominative/instrumental division exists with Polish predicative nouns and that its distribution is closely linked to defining (nominative) and

characterising (instrumental) properties. She bases her investigation on Roy's (2013) study of French predicative nominals that can appear with and without an article. However, doing an informal google search for the appearance of nominative vs. instrumental predicative nominals, the following results were obtained:

(21) Google Hits for predicative nouns in nominative/instrumental

Profession / Nationality 'He is a ...'	Nominative	Instrumental
doctor (lekarz)	10	18,000
boss (szef)	20	16,000
carpenter (stolarz)	7	17,200
actor (aktor)	6	6,960
director (dyrektor)	5	404,000
cook (kucharz)	8	52,500
musician (muzyk)	6	2,610
pole (polak)	36	14,900

The numbers in (21) should be read carefully. Google has a complex algorithm for displaying the number of hits.<sup>11</sup> If we, e.g., look at the hits for *lekarz* 'doctor', we can safely say that there were no 18,000 individual pages with the usage of it in instrumental. What is important, however, is the ratio between nominative and instrumental occurrences. If we stay with *lekarz* 'doctor', we see that for 18,000 hits in instrumental, we get 10 in nominative. For *szef* 'boss', we get 16,000 hits in instrumental, only 20 in nominative. It gets worse for *kucharz* 'cook' where 52,500 instrumental hits challenge 8 nominative hits. When it came to *dyrektor* 'director' over 400,000 instrumental hits were found, whereas only 5 in nominative. If Bondaruk (2014) is right, and there is a strict, predictable distribution between nominative/instrumental, we should get higher numbers for nominative. Therefore, I conclude, that nominative predicative nouns do not exist in Modern Polish with some documented exceptions being explainable by the noun/adjective continuum or the difference

<sup>11</sup> An anonymous reviewers welcomes the google search results, but asks whether a more rigorous methodological corpus search would not be more appropriate. I do agree that we need more thorough testing of this the phenomenon for future research. For the moment, the google hits show a clear pattern, which I think suffices for the point made here.

boiling down to DPs vs. NPs. I will say though that I think Bondaruk's (2014) analysis is right when looking at older stages of the Polish language. As mentioned before, there was a nominative/instrumental split in older stages of the language and Bondaruk's proposal could very well explain its distribution.

To conclude this section. I have argued for two different structures for two different kinds of predication – AP predication and DP predication. AP predication always surfaces with agreeing nominative case morphology, whereas DP predication appears in instrumental, and therefore it involves more structure.

In the next section, I will show that the observed facts of predication can help us understand the case possibilities in control better.

#### 4. Control revisited – structure and interpretation

##### 4.1 Subject control

In this section, I revisit the original research question, namely how to explain the two possible case variations found in Polish control when adjectives are involved (1). In this subsection, I will first take a look at subject control. The corresponding data is repeated in (22).

- (22) a. Jan próbuje być miły  
 Jan.NOM tries be.INF nice.NOM  
 'Jan tries to be nice.'
- b. Jan próbuje być miły-m  
 Jan.NOM tries be.INF nice-INST  
 'Jan tries to be a nice one.'

The proposal is that control structures like in (22) embed the two kinds of predication relations introduced in the previous section. As I have shown there, there are two forms of predication in Polish which I have called AP predication (nominative marking) and DP predication (instrumental marking). So, in principle both routes should be available in control, and this seems to be true, at least for subject control. I submit that the data in (22a) embeds AP predication as in (11), while the data in (22b) embeds DP predication as in (13). Thereby, I assume that the adjective in instrumental is actually a modifier of a DP whose noun has been elided in a process of NP-ellipsis. Why should there be an empty noun in the structure in (22b)? Let me discuss two arguments in favor of this analysis. An important fact is that the head noun can be overtly realized. Once it is, the noun and all of its modifiers have to appear in instrumental, nominative is impossible.

- (23) a. Jan próbuje być miły-m człowiek-iem /\*miły człowiek  
 Jan.NOM tries be.INF nice.INST man-INST / nice.NOM man.NOM  
 'Jan tries to be a nice man.'
- b. Jan próbuje być dobry-m lekarz-em /\*dobry lekarz  
 Jan.NOM tries be.INF good.INST doctor-INST / good.NOM doctor.NOM  
 'Jan tries to be a good doctor.'
- c. Jan próbuje być nim / \*on

Jan.NOM tries be.INF he.INST / he.NOM  
 ‘Jan tries to be him.’

In (23a), we see the overt realization of the head noun *człowiek* ‘man’ and it can only be in instrumental case marking. Thus, it follows the rules of predication where nouns, or DPs, must always occur in instrumental. If control embeds predication, this case pattern is not surprising, and not default at all, but rather structurally assigned and predictable. In addition, Witkoś (2010) has argued for instrumental being default for adjectives, and nominative for nominal elements. The instrumental in (23) would thus be unexpected under a default case account, as one would expect the nominal predicates to receive a default nominative, contrary to fact.<sup>12</sup> In (23b), we see that the same is true for less generic nouns like *lekarz* ‘doctor’ and in (23c), we see that pronouns, undisputedly DPs, also show the same pattern.

The other argument for a silent noun in the structure involves the semantics of control. As it becomes visible from the translation, the interpretation of (22a) is *John tries to be nice*. The interpretation of (22b) is closer to *John wants to be a nice ONE*. This interpretation can be easily derived if an elided noun is present in the structure.

Having now sketched the internal structure of the non-finite clause of the data in (22) let me now go into more details. In order to model the control relation, I will follow Landau’s (2015) two-tiered theory of control; in addition, I will only concentrate on examples for predicative control, and leave out examples for logophoric control, as the main focus of this paper is the structure of the infinitival clause, which is the same for the two types of control. I will start with subject control and agreeing adjectives. The underlying structure of (22a) is represented in (24).

(24) [<sub>TP</sub> Jan [<sub>VP</sub> Jan próbuje [<sub>FinP</sub> PRO [<sub>TP</sub> PRO [<sub>CopP</sub> PRO być [<sub>AP</sub> PRO miły]]]]]]]

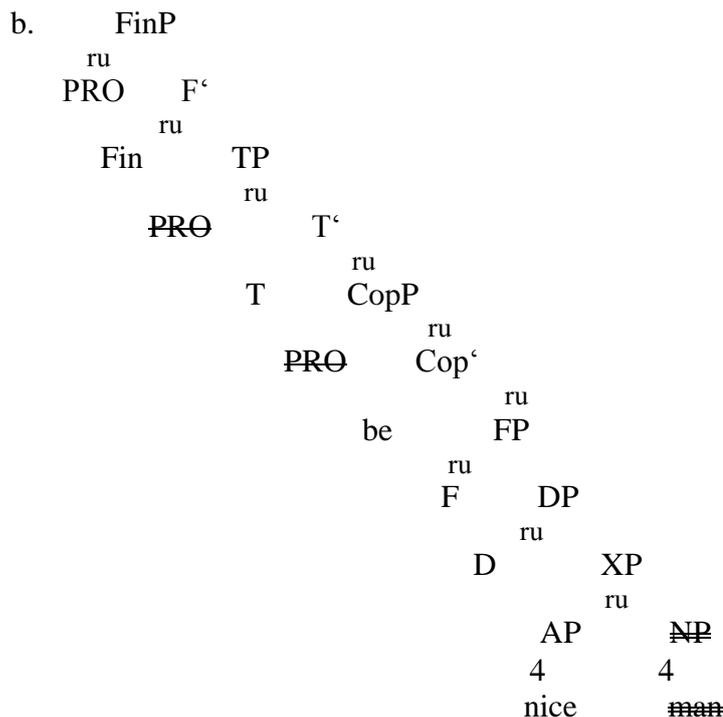
I will go through the derivation step by step. The derivation starts with the AP with the predicate *miły* ‘nice’ and the subject of the non-finite clause, PRO, being base-generated there. They share phi-features (Frampton and Gutman 2000). PRO moves up to Spec,CopP creating the predication relation (den Dikken 2006), it further moves up into Spec,TP and checks the EPP. Above TP a predicative phrase, FinP, is projected. This projection is assumed to model the control relation via predication (Landau 2015). In order to turn the FinP into a predicate, PRO moves into its specifier via operator movement (Heim and Kratzer 1998). Now, the matrix clause is built up, *Jan* is introduced as the external argument of the control predicate.<sup>13</sup> Little *v* acts as a relator (den Dikken 2006) and predication is established between the external argument of *próbować* ‘try’, namely *Jan* and FinP, the latter being turned into a predicate and thus it is able to participate in predication relations. *Jan* moves further up to TP where it checks the EPP and nominative is assigned. Case is transmitted to all copies of *Jan*, as well as to PRO via agreement. PRO further transmits nominative to all elements it has shared its phi-features with and that carry case features, here with the predicate *miły* ‘nice’. Therefore, all case bearing elements appear with the same case, here nominative. Crucially, I assume here that PRO does indeed carry case (contra Chomsky 1981) in line with more recent research on the case properties of PRO (Landau 2008; Sigurðsson 2008; Sheehan 2013, 2016).

<sup>12</sup> Witkoś mentions that nouns take nominative as the default (Witkoś 2010:209) without elaborating further on it.

<sup>13</sup> Whether we have VP, vP, VoiceP or even more structure, is not of great importance for this analysis.

Let us now consider how the derivation looks like for the adjective appearing in instrumental case marking (25). In (25b) I have only represented the structure of the infinitival clause, as the rest of the derivation mirrors the one in (24).

- (25) a. [<sub>TP</sub> Jan [<sub>VP</sub> Jan próbuje [<sub>FinP</sub> PRO [<sub>TP</sub> PRO [<sub>CopP</sub> PRO być [<sub>FP</sub> F  
 Jan.NOM tries be.INF  
 [<sub>DP</sub> miły-m ~~człowiek-iem~~]]]]]]<sup>14</sup>  
 nice- INST man-INST



Importantly, I assume here that the starting point is not an AP as in example (22a), but rather a full-fledged DP, for reasons stated above, with the predicate *miły* ‘nice’ modifying the head noun. In a neutral environment, without more context, I assume that there is a generic noun like *człowiek* ‘man’ occupying the head of the NP. So, the derivation starts with the noun *człowiek* ‘man’ and the adjective *miły* ‘nice’ sharing their phi-features. Above of the DP, we project an FP, for reasons explained in the previous section. Then the CopP introduces the copula and the subject, which in this case is PRO and the predication relation is established. PRO moves up to TP to check the EPP and moves further to FinP to turn it into a predicate. The matrix clause is now built up which works in parallel to (24). However, once the matrix subject gets case, it is transmitted to all copies, and to PRO, yet PRO has not the same connection to the predicate *miły* ‘nice’ as it has in (23a). Therefore, the adjective cannot appear in nominative. Furthermore the FP has already assigned instrumental to its complement. As a last step, the generic noun is elided in a process of optional NP-ellipsis.

To conclude, I have shown that subject control involving predicative adjectives in Polish do not give us any insights into the nature of control, as the case variations can be explained by the characteristics of predication. In predication, we find the exact two case patterns that also appear in control. I have then proposed to embed both predication structures under

<sup>14</sup> A crossed out element is a copy, a doubly crossed out element indicates ellipsis.

control, thus explaining the case possibilities. Thereby, I have argued that instrumental adjectives are not APs, but rather the modifier of a bigger phrase, namely the DP. Due to the possibility of NP-ellipsis, the head noun may be unpronounced.<sup>15</sup> Therefore, this analysis provides an alternative to previous accounts where the instrumental case was assumed to be a default case (Bondaruk 2004; Witkoś 2008, 2010).

4.1.1 A note on adjectives and NP-ellipsis

The proposed analysis hinges crucially on the possibility of NP-ellipsis in the context of control. Furthermore, at this point it makes the prediction that such an operation should be licit in other predicational contexts as well creating instrumental adjectives without an overt head noun. While this is not untrue, one must be careful as to how to phrase it. Consider the data in (26).

- (26) a. Johann        jest miły        / miły-m ??(człowiek-iem)  
 John.NOM    is    nice.NOM /nice-INST (person-INST)  
 ‘John is nice / John is a nice one.’ (Przepiórkowski 2004b:107)
- b. Johann    chce być    miły        / miły-m (człowiek-iem)  
 John.NOM wants be.INF nice.NOM /nice-INST (person-INST)  
 ‘John wants to be nice / John wants to be a nice one.’ (Przepiórkowski 2004b:107)
- c. Jan        bał się    nawet    chcieć    spróbować    wydawać się  
 Jan.NOM feared REFL even    want.INF try.INF        seem.INF REFL  
 ??szczęśliwy    /szczęśliwy-m (człowiek-iem)  
 happy.NOM /happy-INST (person-INST)  
 ‘John was afraid to even want to try to seem happy.’  
 (Przepiórkowski 2004b:107)<sup>16</sup>

(26b) shows a simple control construction with optional NP-ellipsis. The same operation is very restricted in a smaller clause as in (26a). Often, the application of NP-ellipsis requires more context to license it. In (26c), we see that the more distance between matrix subject and predicate is created, the worse the agreeing option gets and the instrumental option becomes better. It seems that NP-ellipsis becomes better, or is licensed more easily, the less local the relationship between subject and predicate is. In (26a) we have a very local relation, so instead of eliding a noun, it seems to be preferred to use the other form of predication, namely AP predication. With control both options seem to be possible (26b)<sup>17</sup> and with long distance control, the DP predication route even seems to be preferred (26c).

<sup>15</sup> One needs to say more about the exact mechanism of NP-ellipsis and what it is exactly that licenses it. I follow Alexiadou & Gengel (2012) in assuming that it is something about the internal structure of the DP that makes ellipsis possible. Please consult Lindert (2016) for an application of Alexiadou & Gengel’s system to Polish.

<sup>16</sup> Examples are taken from Przepiórkowski (2004b); however, I added the second translation with *one* insertion in (26a) and (26b) which corresponds to the structure with instrumental marked adjectives. He mentions that an example like (26a) without the head noun can only be acceptable if it is interpreted with a corresponding noun. In (26c) I added the element in brackets.

<sup>17</sup> In informal talks, most of my informants said they accepted both forms. Two did not accept the instrumental marking in (26b); however, when confronted with object control, they did not like instrumental

#### 4.2 Object control

The analysis proposed so far smoothly accounts for the optionality found with predicative adjectives in subject control. This optionality does not extend to object control, the relevant data is repeated below.

- (27) a. Piotr kazał Tomk-owi być miły-m / \*mił-emu  
 Peter.NOM ordered Tom-DAT be.INF nice-INST / nice-DAT  
 ‘Peter ordered Tom to be nice.’ (Przepiórkowski 2004b:104)
- b. Piotr uczył synk-a być grzeczny-m / \*grzecz-ego  
 Peter.NOM taught son-ACC be.INF polite-INST / polite-ACC  
 ‘Peter taught his son to be polite.’ (Przepiórkowski 2004b:104)

In (27a) we see object control with a lexically-case marked object in the dative. In (27b), we see a structurally-case marked object in the accusative. In both structures only the instrumental is available for the respective predicative adjective. Neither dative nor accusative are possible. Thus, already at this point we can conclude that Polish does not discriminate between structural and lexical cases when it comes to object control. Surprisingly, it thus does not behave like two related languages, namely Russian and Czech, which allow case transmission of structurally case-marked objects (Landau 2008; Przepiórkowski and Rosen 2005).

Couching the observed Polish facts into the proposed analysis, this suggests that only DP predication is licit, whereas AP predication is blocked.

In theory, there are two possible solutions to the challenge of the impossibility of agreeing case in object control. It could be a specific characteristic of predication that blocks this kind of mechanism. The other option would be that it is a specific control mechanism that blocks the respective case marking on the adjective. I present the two possibilities in the next subsection and ultimately conclude that it is a defining property of control that blocks dative/accusative adjectives in object control.

##### 4.2.1 A predicational restriction?

A possibility to account for the data in (27) is that the module of predication contains some kind of rule that prohibits the structure. There might be morpho-syntactic constraints when it comes to case marking of predicative adjectives. A hypothesis could be that in predication, dative, accusative, or genitive never appear on adjectives.

However, if we probe deeper into predication and case in Polish, we actually do find examples for non-nominative adjectives. Case marking on secondary predicates is quite unpredictable in Polish (Przepiórkowski 1999) but it does allow more freedom than object control does.

- (28) a. Pamiętam go miły-m / mił-ego  
 I.remember him.ACC nice-INST / nice-ACC  
 ‘I remember him as nice.’ (Przepiórkowski 1999:203)

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either stating that a noun is missing. This might support my analysis in assuming an empty N, with these informants not being able to apply NP-ellipsis as freely as other speakers.

- b. *Lubiłem Jank-a trzeźw-ego / ?trzeźwy-m*  
 I.liked John-ACC sober-ACC / sober-INST  
 ‘I liked John (when he was) sober.’ (Przepiórkowski 1999:203)
- c. *Zjadł kurczak-a posolon-ego / ?\*posolony-m*  
 He.ate chicken-ACC salted-ACC / salted-INST  
 ‘He ate the chicken salted.’ (Przepiórkowski 1999:203)

Przepiórkowski (1999) notes that the instrumental is restricted in secondary predication, whereas the agreeing version is always available. In (28a) the secondary predicate *miły* ‘nice’ can appear in instrumental as well as in agreeing case, here accusative. In (28b), the instrumental option is already degraded and in (28c) almost ungrammatical. Please note that the agreeing option is always fine. The data in (28) do pose a problem if we assume that non-nominative cases are blocked in object control due to predication not allowing transmission of these cases to predicative adjectives.

In addition, even in primary predication we find non-nominative predicative adjectives; the data is more complex though (29).

- (29) *Pięć kobiet było miły-ch / mił-e*  
 Five.ACC women.GEN was nice-GEN / nice-ACC  
 ‘Five women were nice.’ (Przepiórkowski, p.c.)

In (29), we see that the predicate *miły* ‘nice’ may surface in accusative or in genitive marking. The data is rather complex as it involves a number higher than five and these have a peculiar behaviour in Polish, and in Slavic in general (Przepiórkowski 2004a). Numerals higher than five govern the genitive case thus marking their complement genitive, here *kobiety* ‘women’. The copula does not agree with the subject *pięć kobiet* ‘five women’ but rather appears in default third person singular neuter morphology. It has furthermore been argued that the numeral *pięć* ‘five’ is marked accusative (Przepiórkowski 2004a). Having the numeral in accusative, the noun in genitive, the two case possibilities can be explain if we allow case transmission of these cases. Example (29) shows that case transmission of accusative and genitive is possible in predication.

We can conclude that predication does not forbid the transmission of non-nominative cases as shown by the data in this section. Therefore, predication may not explain why object control forbids the transmission of non-nominative cases. In the next section, I will explore a control specific solution to the dilemma posed by object control.

#### 4.2.2 A control restriction?

If we do not find the solution for why non-nominative adjectives are blocked in object control in predication, there might be a control mechanism at hand that prevents the adjective in object control to receive the case of its controller.

The descriptive observation from the control data so far is that any case that is non-nominative cannot be transferred to the adjective. An idea would be that PRO in obligatory control cannot carry any case that is non-nominative in Polish.

One implementation would be that non-finite T is the locus of nominative, meaning non-finite T assigns nominative to the element it agrees with. The element that agrees with non-finite T is PRO (e.g. Landau 2000). Due to this agree relation, PRO would receive nominative

from non-finite T. In addition, PRO has matched its phi-features with the predicate, therefore, PRO will transmit these features to the predicate and case as well to satisfy the case feature of the adjective. However, this predicts that nominative should be fine on the adjective, contrary to fact (30).

- (30) a. \*?Piotr kazał syn-owi być miły  
 Peter.NOM ordered son-DAT be.INF nice.NOM  
 ‘Peter ordered his son to be nice’
- b. \*?Piotr uczył syn-a być miły  
 Peter.NOM taught son-ACC be.INF nice.NOM  
 ‘Peter taught his son to be nice.’

The data in (30) show that nominative adjectives in object control border on ungrammaticality, no matter whether a lexical case (30a) or a structural case (30b) is involved. Surprisingly, it is slightly better than the agreeing version, but eventually the difference is small and both versions are not liked by native speakers. Therefore, we can reject the hypothesis that non-finite T assigns nominative in Polish.<sup>18</sup>

Maybe the answer to the question why AP predication is blocked in object control, lies in the specific structural configuration that makes this form of predication illicit. Let us consider the data again (31).

- (31) a. \*Piotr kazał Tomk-owi być mił-emu  
 Peter.NOM ordered Tom-DAT be.INF nice-DAT  
 ‘Peter ordered Tom to be nice.’
- b. \*<sub>[RP Tom R <sub>[FinP PRO <sub>[TP PRO T <sub>[CopP PRO be <sub>[AP PRO nice<sub>DAT</sub>]]]]]]]]]</sub></sub></sub></sub></sub>

The data in (31a) corresponds to the illicit structure with the agreeing adjective, and (31b) shows the underlying structure following Landau’s (2015) proposal for object control sentences. The derivation starts with the adjective *miły* ‘nice’ and PRO sharing their phi-features. PRO moves into Spec,CopP to establish predication; it further moves to Spec,TP to check the EPP and to Spec,FinP to turn the phrase into a predicate. So far, it follows the same structure as subject control with agreeing adjectives. In the matrix clause, the object Tom is introduced in an RP.<sup>19</sup> The head of RP establishes predication between the object controller Tom and the infinitive. Eventually, all features of the object controller are copied onto PRO, including the dative case. Assume now, that this is where the problem starts. It has already been observed that non-nominative case cannot easily be transmitted onto other elements, like adjectives (Bondaruk 2004). This needs an explanation. It could very well be that this is a PF phenomenon. PRO receives dative in (31b). However, it also moves through Spec,TP – a canonical subject position. Therefore, PRO has subject properties (Landau 2015) but also dative case. As Polish lacks dative subjects (Bondaruk and Szymanek 2007) this leads to a problem. In order not to visualize the paradox, case is not transmitted, i.e. is not made visible

<sup>18</sup> See Martin (2001) for an implementation of the idea that non-finite T does assign case, namely null case. Another interesting possibility would be to assume that non-finite T assigns instrumental, thus deriving this case option in object control. Please consult Przepiórkowski (1999:217-220) for criticism of this idea.

<sup>19</sup> Landau (2015) calls this projection RP following den Dikken (2006). One could also call it an AppIP (Pyllkänen 2008) without changing the argument made here.

on the adjective at PF. However, the case feature of the adjective remains unchecked and as a result the derivation crashes. This idea is summarized in (32).

(32) PRO and case

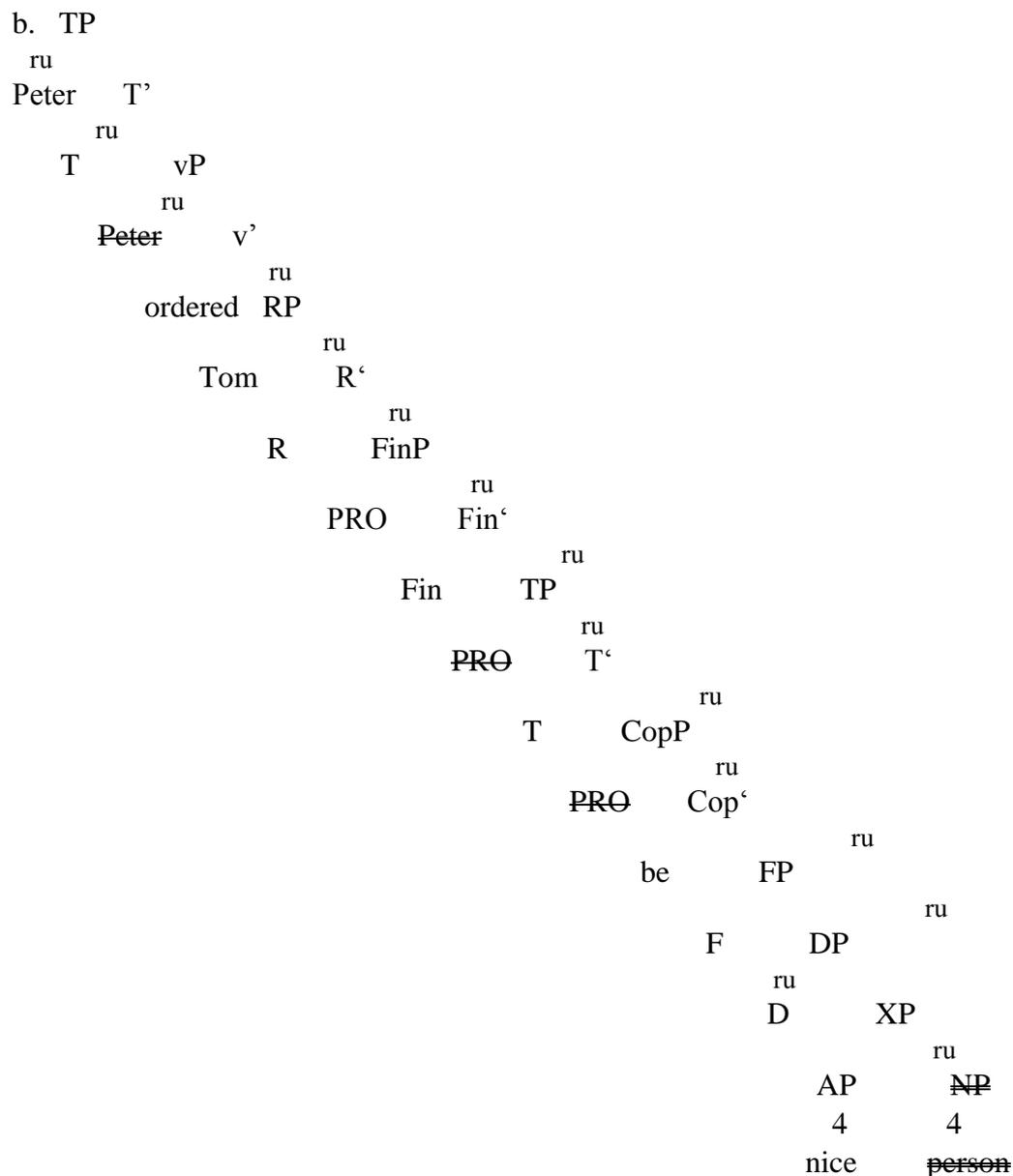
At PF, when PRO's case needs to be morphologically realized, this must not signal conflicts with independent requirements of the language (such as the ban against quirky subjects).<sup>20</sup>

The impossibility of dative (or accusative) in object control would then follow from PRO's conflicting properties – namely being a subject and carrying dative – not being realized as PF. As long as they are not realized, the derivation may continue. The rule in (32) is not universal, but language-specific. In Polish, there is a very strict condition on the specific agree relations in control. As stated before, in other languages like Russian and Czech, case transmission in object control is possible, as long as it is a structural case that is transmitted. So, in these languages, the underlying rule would be that PRO may enter an agree relation with the object, as long as the functional projection allocates a structural case. Polish PRO seems to be more selective resulting in a very strict case pattern in object control. In order to see how the rule in (32) can still account for a licit object control sentence, let us consider the variant with the instrumental adjective (33).

- (33) a. Piotr            kazał        Tomk-owi    być        miły-m  
          Peter.NOM    ordered    Tom-DAT    be.INF   nice-INST  
          'Peter ordered Tom to be nice.'

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<sup>20</sup> See Bondaruk (2004:257-259) for a similar proposal. For her, instrumental appears as the elsewhere case in object control, as PRO carries accusative/dative ('objective case' for her) and therefore, the adjective must appear in the elsewhere case, instrumental.



The structure in (33b) starts out with a DP, as I assume that DP predication is projected with instrumental adjectives. Here again, I assume that the head noun is of a very generic nature, namely *człowiek* ‘man’. They share their phi-features. FP is projected to assign case and turn the saturated DP into a predicate. PRO is inserted in Spec,CopP where it establishes predication. The next movement steps are the same as in (31). Important to note is that in this structure, PRO also gets dative assigned. Why does this not lead to a crash of the derivation, as in (31)? The answer is that the derivation in (33b) does not violate the control rule in (32). Everything is fine, as long as the conflicting properties are never spelled out, i.e. no problem occurs at PF. As PRO and the adjective have not shared their phi-features, the adjective would not receive any qualities of PRO anyway. In addition, the adjective’s case feature is satisfied by FP assigning instrumental to its complement.

To sum up, I have argued that the restriction of dative and accusative adjectives in Polish control does not follow from predicational rules – as these adjectives do exist – but rather

from the interaction of predication module and the control module resulting in PRO being assigned conflicting properties and a ban of these conflicting qualities to be phonologically realized. Therefore, for object control, AP predication is not possible due to the structural configuration. The only other way to produce object control is by projecting DP predication in the infinitival clause, resulting in instrumental case marking on the adjective.

### 5. Conclusion

In this paper, I have taken a closer look at the case properties of predicative adjectives in Polish subject and object control. I have proposed an account that assumes predication to be present in the non-finite clause and that instrumental adjectives are actually DPs with the head noun being elided. The head noun may actually be phonologically realized revealing instrumental just like DPs have in predication. I have furthermore shown that the impossibility of agreeing case in object control does not follow from the rules of predication in Polish, but rather that it is a property of PRO that then results in the unavailability of dative/accusative adjectives in Polish in this construction.

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### Abbreviations

ACC	Accusative
COP	Copula
DAT	Dative
GEN	Genitive
GON	Genitive of Negation
GRND	Gerund
INF	Infinitive
INST	Instrumental
LOC	Locative
NEG	Negation
NOM	Nominative
REFL	Reflexive

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# Menominee Agreement

## Two Probes for Two Hierarchies

Thuy Bui

In this paper, I present an agreement mechanism for Menominee. Béjar & Rezac (2009) offer an analysis of Algonquian agreement based on the notion of Cyclic Agree whereby one articulated probe is capable of targeting multiple points on the  $\phi$ -geometry independently. However, Macaulay (2005) has shown that Menominee follows different person hierarchies in different agreement slots. I propose that there are two probes corresponding to person and number features, ultimately selecting two different hierarchies in Menominee agreement system. I further argue that both of the probes only need to license second and first person, but not third person arguments.

### 1. Introduction

This paper concerns itself with the complex agreement system in Menominee, an Algonquian language. The Algonquian languages are very often cited as ranking 2<sup>nd</sup> person over 1<sup>st</sup>. Taking Ojibwe as one of the exemplary languages, Béjar & Rezac (2009) offer a compelling analysis of Algonquian agreement based on the notion of cyclic agree, following this ranking in which 2<sup>nd</sup> > 1<sup>st</sup> > 3<sup>rd</sup> person, where > means ‘outranks’.

In general, this Cyclic Agree system accounts reasonably well for the singular paradigm in Algonquian languages. However, it fails to give a satisfactory record of the plurality agreement. Furthermore, not only does Menominee has multiple instances of  $\phi$ -agreement, it also has different rankings in person hierarchy for different agreement slots. In particular, while the core agreement and theme sign of Menominee follow the typical 2<sup>nd</sup> > 1<sup>st</sup> > 3<sup>rd</sup> ranking in person hierarchy, the plural suffix selects the 1<sup>st</sup> > 2<sup>nd</sup> ranking.

This study aims to present an agreement mechanism for Menominee, and to thereby discuss a system that accounts for number agreement in Algonquian languages in which two distinct hierarchies are active. The claims made in this study can also extend to the analysis of a wider range of languages, shedding light to a broader picture on linguistic typology.

My analysis proposes that in the Menominee agreement system, there are two probes corresponding to the person and number features, ultimately selecting two different rankings in the person hierarchy. As a result, besides the  $\pi$  probe that Béjar & Rezac has proposed, a new full  $\phi$  probe needs to be introduced in order to capture these additional facts. Furthermore, only Speech Act Participants, which are first and second persons, need to have their features checked by entering into an Agree relation with a probe. Third person, on the other hand, needs not to be licensed.

The paper is structured as follows. In Section 2, a verbal template in Menominee will be briefly introduced. In Section 3, a detailed analysis of the ranking in person hierarchy of the core agreement will be presented. In section 4, the Cyclic Agree mechanism that Béjar & Rezac proposed for the agreement system of Algonquian languages, especially Ojibwe, will be applied to the singular paradigm in Menominee. Section 5 illustrates the plurality agreement system with two argument positions, which are local and non-local. Then, based on some adaptations and developments from the Cyclic Agree system, a new mechanism that can account for both the person and number features in Menominee agreement system will be proposed in section 6. Section 7 will then show how the proposed system can account for both direct and inverse context in the Menominee plural paradigm. Lastly, Section 8 summarizes the main points and concludes the paper.

## 2. Verbal Template

The agreement patterns in Algonquian languages can be characterized as having multiple arguments competing for the control of one agreement slot. Therefore, the result is sensitive to the values of person features on both the subject and object. In other words, the Algonquian agreement systems are sensitive to person hierarchies in which the controller is given by some ranking of the subject and the object on the basis of their person specifications.

This system also generates two classes of derivations for transitive clauses in Algonquian. Firstly, there is a class corresponding to direct contexts. In this class, the subject controls agreement. On the other hand, there also exists another class in which agreement tracks the object. This class corresponds to inverse contexts.

The traditional Algonquianist analysis<sup>1</sup> breaks agreement down into three main categories, which are core agreement, theme sign, and plurality agreement. In the independent order<sup>2</sup>, Menominee verbal morphology obeys the following rough template:

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<sup>1</sup>Work on Algonquian morphosyntax has involved research by Bruening (2001) on Passamaquoddy, Clark & MacKenzie (2005) on Innu, Dahlstrom (1991) on Plains Cree, Macaulay (2005) on Menominee, and Valentine (2001) on Ojibwe, among others.

<sup>2</sup>There are two different syntactically-conditioned paradigms in Menominee. The basic one, which is the focus of this paper, is called “independent order”, and is simply the indicative mood. There is also a “conjunct order”, which will not be addressed in the discussion, is most often used in embedded contexts.

Morpheme	CORE	ROOT	THEME SIGN	LOC PL	NL PL
Features	[ $\pi$ ]		[ $\pi$ ]	[ $\pi$ ] [#]	[ $\pi$ ] [#]
Exponents	1: ne- 2: ke- 3: Ø-	V	DIR.NL: -aw INV.NL: -ekow DIR.LOC: -em INV.LOC: -enenem	1PL: -enaw 2PL: -waw	3PL: -ak

Table 1: The Menominee Verbal Template (Bloomfield 1962)

Each template position may only host one affix, and may be empty if no relevant arguments are present. The following example represents all the inflectional slots of the above template:

- (1) ne- tepan -aw -enaw -ak  
 1 love DIR.NL 1PL 3PL  
 ‘We (exc.) love them.’ (Bloomfield 1962:153)

One of the positions where fusion of two morphemes can be found is the theme sign. The morphemes *-a*, *-eko*, *-e*, and *-enene* appear in the direct non-local, inverse non-local, direct local, and inverse local contexts, respectively. Furthermore, according to Trommer (2006), the morpheme *-w* appears if there is at least one third person argument, and *-m* appears if there is no third person argument.

### 3. Core Agreement

In a clause where the  $\pi$  specification of the subject is first person and that of the object is third person, agreement is controlled by the first person argument, as shown in (2):

- (2) **ne-** tepan -aw  
 1 love DIR.NL  
 ‘I love him.’ (Bloomfield 1962:152)

Meanwhile, when the subject is a 3<sup>rd</sup> person argument, and the object is a 1<sup>st</sup> person argument, agreement also tracks 1<sup>st</sup> person, as shown in (3):

- (3) **ne-** tepan -ekow  
 1 love INV.NL  
 ‘He loves me.’ (Bloomfield 1962:154)

In (2), when the subject is a first person argument, and the object is a third person argument, agreement tracks the subject. However, in (3), while the subject is third person, and the object is first person, it is the object that controls the agreement. This can be characterized as the person hierarchy effect such that 1<sup>st</sup> > 3<sup>rd</sup> person. In other words, because in Menominee, the hierarchy of 1<sup>st</sup> > 3<sup>rd</sup> determines the choice of controller in the core agreement, a first person argument will always win over a third person argument. As a result, the agreement morpheme *ne-*, which marks the presence of first person, is selected to appear in this prefix slot.

The direct-inverse alignment system is what distinguishes (2) and (3). While the subject controls agreement in (2), it is the object that is tracked by agreement in (3). Therefore, the morphemes *-aw* corresponding to direct contexts appears in (2). Meanwhile, since (3) corresponds to an inverse context, it is marked with *-ekow*.

Likewise, the ranking  $2^{\text{nd}} > 3^{\text{rd}}$  is also determined in this slot. As shown in (4) and (5) below, when one of the DPs is a second person argument, and the other is a first person argument, the morpheme that surfaces in the prefix core agreement slot is always *ke-*, which marks the presence of second person.

(4) **ke-** tepan -aw  
 2 love DIR.NL  
 ‘You (sg.) love him.’ (Bloomfield 1962:152)

(5) **ke-** tepan -ekow  
 2 love INV.NL  
 ‘He loves you (sg.).’ (Bloomfield 1962:154)

This shows that the person hierarchy observed in the core agreement slot is  $1^{\text{st}}$  and  $2^{\text{nd}} > 3^{\text{rd}}$ . The ranking in which first and second persons outrank third person argument found in Menominee reflects the natural classes for person features. According to Harley & Ritter (2002), third person is unmarked. Meanwhile, first and second persons are specified as discourse participants, and thus they are grouped into a natural class of the exclusion of third person.

In order to determine the ranking between first and second persons in person hierarchy, the following Menominee examples, which involve the interaction between the Speech Act Participants will be taken into account:

(6) **ke-** tepan -em  
 2 love DIR.LOC  
 ‘You (sg.) love me.’ (Bloomfield 1962:156)

(7) **ke-** tepan -enenem  
 2 love DIR.LOC  
 ‘I love you (sg.).’ (Bloomfield 1962:156)

Whether the second person is the subject, as in (6), or the object, as in (7), *ke-*, which marks the presence of second person will ultimately appear in the prefix position. This means that for the core agreement, second person is ranked higher than first in the hierarchy.

The controller for the Menominee prefix is given by the  $2^{\text{nd}} > 1^{\text{st}} > 3^{\text{rd}}$  person hierarchy. Therefore, for the core agreement slot, the morphological  $\pi$  features reflect the following entailment relations among person features (Harley & Ritter 2002):

(8) Entailment: [addressee]  $\subset$  [participant]  $\subset$  [ $\pi$ ]

As a result, Menominee differentiates first and second persons by specifying the latter as [addressee] rather than by specifying the former as [speaker]. A bare [participant] is then interpreted as first. Consequently, second person is the most specified, as illustrated in Table 2:

(3)	1	2
[[ $\pi$ )]	[ $\pi$ ] [participant]	[ $\pi$ ] [participant] [addressee]

Table 2: Person specifications in the core agreement slot in Menominee

#### 4. Cyclic Agree for the Singular Paradigm

Thus far, the Menominee data appear to fit with the claim that Algonquian languages have a fully articulated probe with the structure [ $\pi$  [participant [addressee]]], which is notated as [ $u$ -3-1-2]. Béjar & Rezac (2009) offer a compelling analysis for the agreement system of Ojibwe, an Algonquian language that is closely related to Menominee, based on the notion of cyclic agree. They propose an articulated probe capable of targeting multiple points on the  $\phi$ -geometry independently. Their system accounts reasonably well for a subset of the Menominee independent order inflection, namely the core agreement and theme sign, as illustrated in the following table:

SUBJ $\rightarrow$ OBJ	2	1	3
		SUBJ AGR OBJ	SUBJ AGR OBJ
2	–	[3] [ $u$ 3] – [3] [1] [ $u$ 1] – [1] [2] – [ $u$ 2]	[3] [ $u$ 3] – [3] [1] – [ $u$ 1] [2] – [ $u$ 2]
	SUBJ AGR OBJ		SUBJ AGR OBJ
1	[3] [ $u$ 3] – [3] [1] [ $u$ 1] – [1] [2] [ $u$ 2] – [2]	–	[3] [ $u$ 3] – [3] [1] – [ $u$ 1] [2] [ $u$ 2]
	SUBJ AGR OBJ	SUBJ AGR OBJ	SUBJ AGR OBJ
3	[3] [ $u$ 3] – [3] [1] [ $u$ 1] – [1] [2] [ $u$ 2] – [2]	[3] [ $u$ 3] – [3] [1] [ $u$ 1] – [1] [2] [ $u$ 2]	[3] [ $u$ 3] – [3] [1] [ $u$ 1] – [1] [2] [ $u$ 2]

Table 3: Cyclic Agree for the singular paradigm in Menominee (Béjar & Rezac 2009)

The table above summarizes the derivations for this paradigm. Instances of Agree are represented by dashes. First- and second-cycle Agree are represented by a dash to the right of the probe and to the left of the probe, respectively. The shaded cells are those having only one Agree step, with the object. The probe has no segments left that can Agree with the subject. Meanwhile, the unshaded cells are those where the characteristic [ $u$ -3-1-2] probe of Menomi-

nee has an active residue after Agree with the object, which will then Agree with the subject on its second cycle.

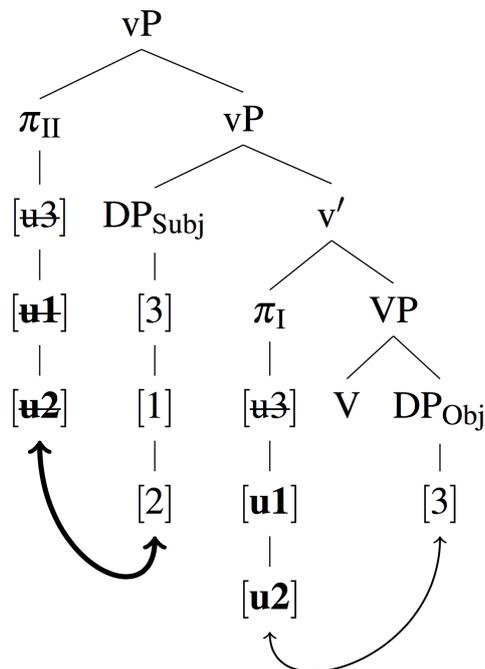
Instructions to PF for spelling out the prefix can originate either on  $v_I$  or on  $v_{II}$  depending on whether the probe was deactivated on the first or second cycle. The prefix agreement morpheme's spell-out is *ne-* for [3-1], *ke-* for [3-1-2], and null for [3].

Firstly, in direct contexts, the subject is more highly specified than the object, as shown in (9) below:

- (9) **ke-** tepan **-aw**  
 2 love DIR.NL  
 'You (sg.) love him.' (Bloomfield 1962:152)

After the  $\pi$  probe has Agreed as fully as possible with the object, it Agrees for its unchecked segments with the subject. In the first cycle, the Menominee characteristic [u3-u1-u2]  $\pi$  probe will match with the segment [3] in the object. This will leave [u1-u2] as active residue. Then, in the second cycle, the  $\pi$  probe expands its search space upwards. The subject, which is a 2<sup>nd</sup> person argument, will value the [u1-u2] active residue, and thus it ends up controlling agreement for the core prefix slot, as illustrated in (10) below:

- (10) *Cyclic Agree for the Menominee direct contexts*



In this structure, the thin arrow indicates the first-cycle Agree, while the thick one shows the second-cycle Agree for the core agreement.

In direct context,  $v_{II}$  is the locus of a probe by virtue of second-cycle agreement. The default *-aw* surfaces whenever  $v_{II}$  hosts the core probe, discharged prior to  $v_{II}$  itself, leaving a bare head to be spelled out. The theme sign *-em* for the direct local forms falls into the class of portmanteau morphology in [participant] contexts, and thus it will be taken to be allomorphy of the core probe in the context of a [participant] valuation of the same probe on  $v_I$ .

On the other hand, in inverse contexts, the object is more highly specified than the subject, as shown in (11) below:

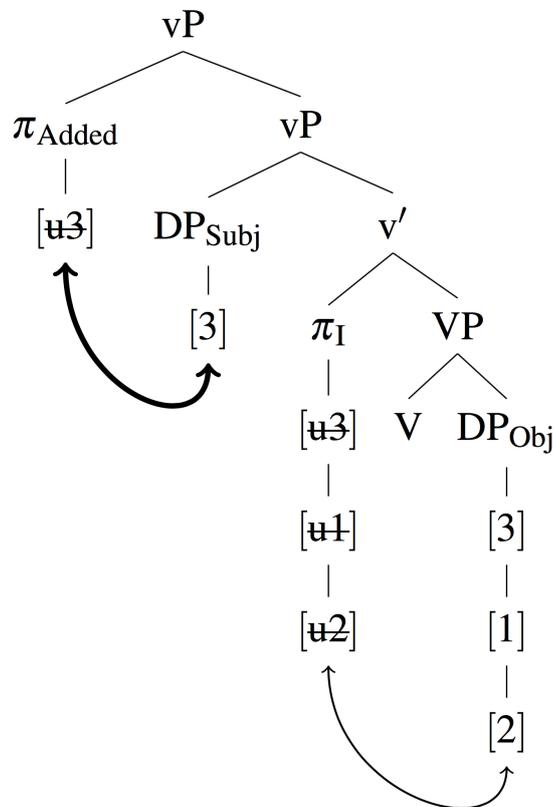
- (11) **ke-** tepan **-ekow**  
 2 love INV.NL  
 ‘He loves you (sg.)’ (Bloomfield 1962:152)

In this case, the  $\pi$  probe is fully valued by the object, and thus it is not reaching the subject at all. As a result, for the second cycle, there will be an added probe Agreeing with the subject to avoid Person Licensing Condition, which is stated as follows:

- (12) *Person Licensing Condition*  
 A  $\pi$  feature [F] must be licensed by Agree of some segment in a feature structure of which [F] is a subset.

Similar to direct contexts, there are also two cycles in the Cyclic Agree mechanism for inverse contexts. In the first cycle, the second person object matches with the [u3-u2-u1] segments, fully valuing the  $\pi$  probe. Therefore, it ends up controlling the agreement for the core prefix slot. In the second cycle, as there is no active residue from the first cycle, an undischarged [u-3] probe will be added in order to Agree with the subject, whose person features need to be licensed, as illustrated in (13) below:

- (13) *Cyclic Agree for the Menominee inverse contexts*



In contrary to the pattern observed in direct contexts,  $v_{II}$  hosts the added probe in inverse con-

texts. The core probe is discharged on  $v_I$ . Then,  $v_{II}$  is realized as *-ekow* when it has an undischarged [u-3] probe, and as *enenem* when it has an undischarged [u-3-1] probe.

## 5. Plurality Agreement

### 5.1. Local Plural and Non-Local Plural: Two Agreement Slots

Although this Cyclic Agree system is able to cover the Menominee singular paradigm, it is not clear how it can extend to the analysis of plurality agreement. The following examples illustrate the two types of plurality agreement in Menominee, which are referred as “local”, as shown in (14), and “non-local”, as shown in (15):

(14) ne- tepan -aw    **-enaw**  
 1 love DIR.NL 1PL  
 ‘We (exc.) love him.’ (Bloomfield 1962:153)

(15) ne- tepan -aw    **-ak**  
 1 love DIR.NL 3PL  
 ‘I love them.’ (Bloomfield 1962:152)

In other words, “local” plurals are the plural arguments of the Speech Act Participants, which are first and second persons. Meanwhile, “non-local” refers to the plural of third person.

Plurality is able to Agree with both the subject and the object independently, suggesting that there are two relevant probes, but sometimes one or both of these probes will fail to agree. Therefore, there are two plural agreement slots roughly corresponding to agreement for local and non-local arguments, as illustrated in the following examples:

(16) ne- tepan -aw    **-enaw -ak**  
 1 love DIR.NL 1PL 3PL  
 ‘We (exc.) love them.’ (Bloomfield 1962:153)

(17) ke- tepan -ekow **-waw -ak**  
 2 love INV.NL 2PL 3PL  
 ‘They love you (pl.).’ (Bloomfield 1962:154)

As shown in (16) and (17), either a first or a second person plural argument can co-occur with a third person plural argument. This results in an interesting pattern, in which verbs with local and non-local arguments will agree with both.

### 5.2. Local Plural: 1<sup>st</sup> > 2<sup>nd</sup>

The local plurals include the plural agreement of first and second persons, whose morphemes will only appear if there is a relevant corresponding argument, as illustrated in the following examples:

(18) ke- tepan -em    **-waw**  
 2 see DIR.LOC 2PL

- 'You (pl.) love me.' (Bloomfield 1962:154)
- (19) ke- tepan -em      **-enaw**  
 2 love DIR.LOC 1PL  
 'You (sg.) love us (exc).'
- (Bloomfield 1962:156)

When the subject is second person plural and the object is first person singular, as in (18), the expected second person prefix *ke-*, which marks the presence of second person, and second person plural suffix *-aw* appear. Likewise, when the subject is second person singular and the object is first person plural, as in (19), the expected prefix *-ke* and suffix *-enaw*, which marks the presence of first person plural, appear.

As noted earlier, each template position may host only one affix. Since there are two candidate controllers, which are 1PL and 2PL, competing for the control of the plural suffix, the local plural agreement shows a more complicated pattern. If both first and second person plural arguments are present in one clause, person hierarchy effect will come into play to determine the local plural agreement morpheme that will appear in this suffix slot, as shown below:

- (20) ke- tepan -em      **-enaw**  
 2 love DIR.LOC 1PL  
 'You (pl.) love us (exc).'
- (Bloomfield 1962:156)

While Béjar & Rezac (2009) dismiss plurality agreement as being easily accounted for, it seems that this form of agreement does display a complicated dependence on the  $\phi$  features of both the object and the subject. Crucially, when both plural agreements are local, only one plural suffix may occur, and the one which appears is the first person plural *-enaw*, as in (20). In other words, first person outranks second for purposes of selection of plural suffix. Since local plural preferentially agree with the first person argument, this probe is articulated differently to the core agreement, which follows the 2<sup>nd</sup> > 1<sup>st</sup> > 3<sup>rd</sup> person hierarchy.

This means that besides the often-cited 2<sup>nd</sup> > 1<sup>st</sup> ranking, the controllers in the two agreement slots are also given by a 1<sup>st</sup> > 2<sup>nd</sup> hierarchy. In particular, the general pattern observed in Menominee is that while the 2<sup>nd</sup> > 1<sup>st</sup> PH still determines the morpheme that appears in the core prefix slot, it is the 1<sup>st</sup> > 2<sup>nd</sup> ranking that the local plural suffix follows. Then, for the local plural suffix slot, the morphological  $\pi$  features reflect a different entailment, as shown below (Harley & Ritter 2002):

- (21) Entailment: [speaker]  $\subset$  [participant]  $\subset$  [ $\pi$ ]

The different entailment relations give rise to an interesting puzzle about person specifications. A contradiction emerges because while the prefix specifies a second person as [addressee], the local plural suffix specifies a first speaker as [speaker], as illustrated below:

(3)	2	1
([ $\pi$ ])	[ $\pi$ ] [participant]	[ $\pi$ ] [participant] [speaker]

Table 4: Person specifications in the local plural agreement suffix slot in Menominee

Therefore, when it comes to the interactions between the Speech Act Participants in Menominee, agreement tracks the second person argument in the core prefix agreement slot, but the first person plural argument in the local plural suffix slot.

## 6. Proposal

### 6.1. No Licensing for Third Person

Firstly, the study proposes that third person plural does not need licensing. The plurality agreement without being specified as first or second person will be defaulted as third person plural. In fact, the only arguments that are relevant to both the core prefix and local plural suffix agreement slots are first and second persons.

Crucially, third person argument only controls the prefix agreement when there is neither a first nor a second person argument present in the transitive clause. Moreover, the general picture in Algonquian languages is that, whenever the prefix agreement ends up tracking a third person argument, a null morpheme will appear in this slot. While a second person argument has its presence marks with *ke-*, and a first person argument *ne-*, a third person argument has no specific agreement morphemes to mark its presence. Third person is indeed the least specified in Menominee. Therefore, being specified as [participant] entails being specified as [ $\pi$ ]. This requires specifying default interpretations for underspecified representations. In other words, [ $\pi$ ] is common to all persons, but a bare [ $\pi$ ] feature will be interpreted as third person.

Furthermore, there are two different plural suffix slots corresponding to local and non-local plural arguments in Algonquian languages. Since third person is a non-local argument, its plural marking appears in a different slot than those of the local arguments. In other words, while 3PL has its own non-local plural slot, 1PL and 2PL arguments have to compete for the control of one local plural agreement slot. Third person plural argument, therefore, is not affected by person hierarchy in the plural suffix. There will never be competitions between a third person plural and a first or second person plural argument. As a result, a plural argument that is not 1PL or 2PL will be automatically put into the non-local plural suffix slot.

### 6.2. A New $\phi$ Probe

In order to account for the plural agreement system, a new probe,  $\phi$ , needs to be introduced. Unlike the  $\pi$  probe that has been previously introduced by Béjar & Rezac (2009), this probe is fully relativized for both person and number features.

As shown in previous sections, Menominee makes use of two distinct rankings for first and second persons. While the core prefix agreement slot follows a 2<sup>nd</sup> > 1<sup>st</sup> ranking, the local plural suffix slot follows a rather opposite ranking in which first person outranks second person. Because the local plural suffix slot follows the 1<sup>st</sup> > 2<sup>nd</sup> hierarchy, this  $\pi$  probe will have the structure [u2-u1]. On the other hand, the  $\pi$  probe will have the [u1-u2] structure.

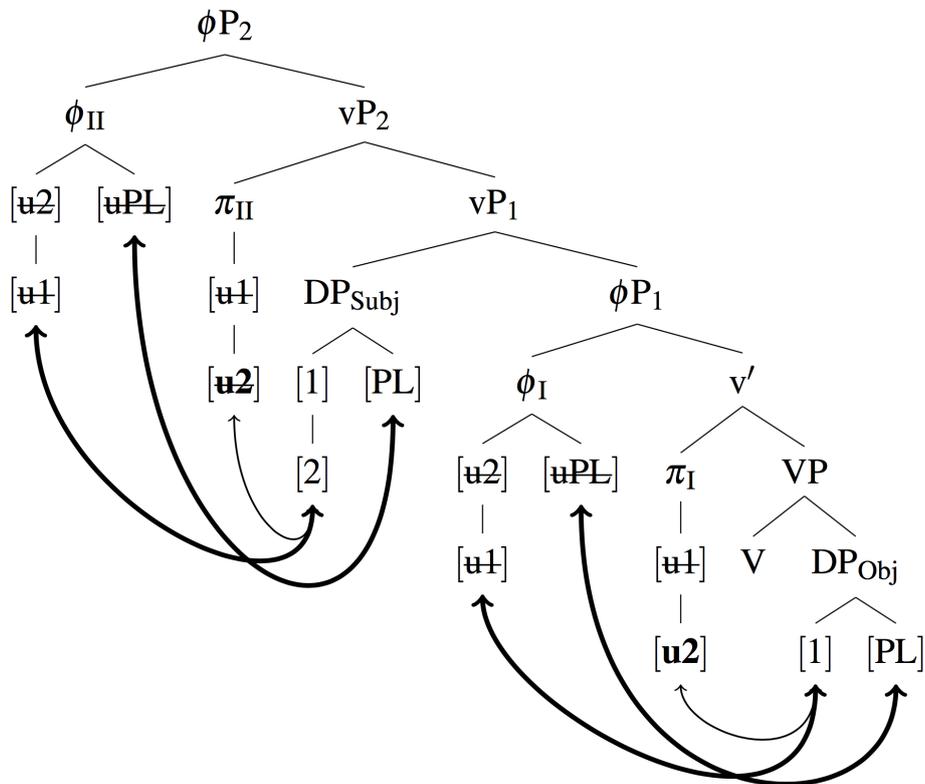
The [u1-u2]  $\pi$ -probe only checks for number features in the object and the subject to determine the agreement morpheme that appears in the core prefix agreement slot. Meanwhile, the [u2-u1]  $\phi$  probe is responsible for licensing both person and number features in the local plural agreement suffix slot.

7. Derivations

7.1. Direct Contexts in the Menominee Plural Paradigm

Following the notion of Cyclic Agree mechanism, there are also two cycles of Agree in direct contexts in Menominee in this system. In the first cycle, both the  $\pi$  and  $\phi$  probes Agree as fully as possible with the object. Then, in the second cycle, both probes expand their search areas upwards to Agree with the subject for their remaining unchecked segments.

- (22) **ke-** tepan -em      **-enaw**  
 2 love DIR.LOC 1PL  
 ‘You (pl.) love us (exc.)’ (Bloomfield 1962:156)
- (23) *Cyclic Agree for direct contexts for the Menominee plural paradigm*



In the structure above, the thin arrows represent instances in which number features in the DP goals are checked against the  $\pi$  probe in both first and second cycles. Meanwhile, the thick arrows represent instances in which the features for the plural suffix are licensed with the  $\phi$  probe in both cycles.

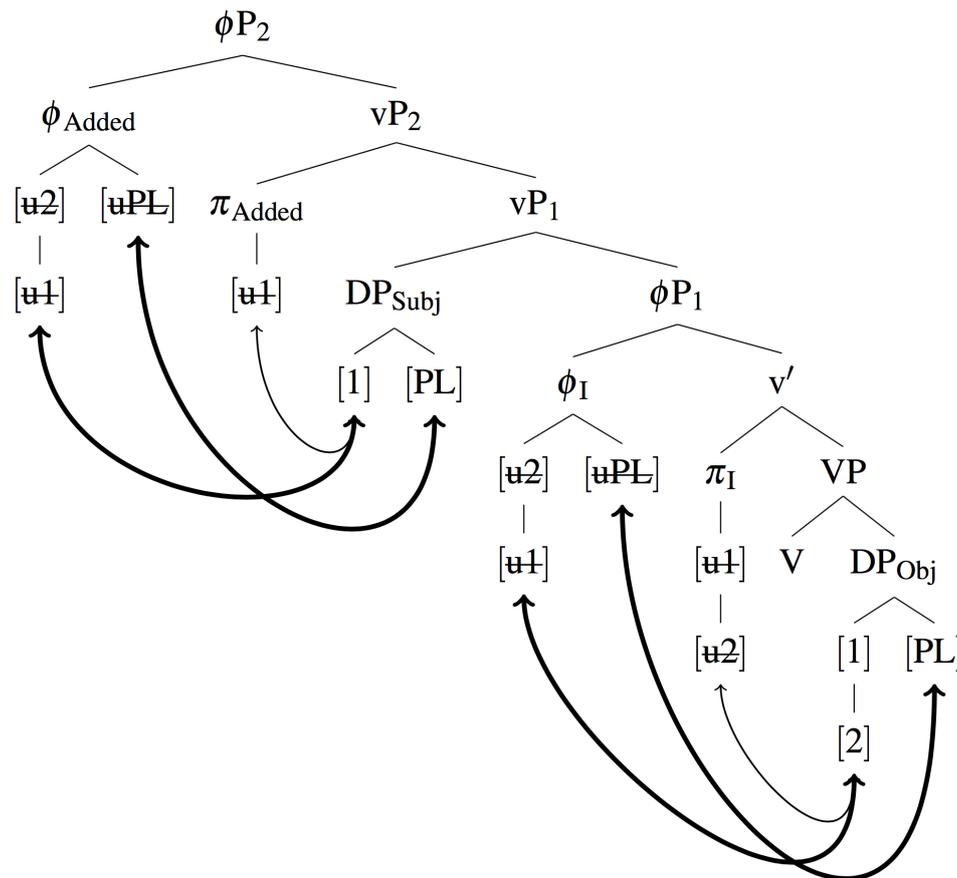
7.2. Inverse Contexts in the Menominee Plural Paradigm

Meanwhile, in inverse contexts, the  $\pi$  and  $\phi$  probes also follow the same Agree mechanism. The only variation in this case is the presence of an added probe, which helps prevent the system

from violating the Person Licensing Condition. In the first cycle, both the  $\pi$  and  $\phi$  probes are fully valued by the object. Afterwards, in the second cycle, added probes are added to value the  $\pi$  and # features of the subject, as illustrated below:

- (24) **ke-** tepan -en       **-enaw**  
 2 love INV.LOC 1PL  
 ‘We (exc.) love you (pl.).’ (Bloomfield 1962:156)

- (25) *Cyclic Agree for inverse contexts for the Menominee plural paradigm*



### 8. Conclusion

This study first examines the agreement system in Menominee. In particular, in contrary to the assumption that Algonquian languages consistently follow one person hierarchy in all of the agreement slots, the Menominee data has shown that there are two distinct rankings in this language. In particular, while the controller of the core prefix agreement slot is determined by the 2<sup>nd</sup> > 1<sup>st</sup> ranking, the local plural suffix slot takes on the 1<sup>st</sup> > 2<sup>nd</sup> hierarchy.

In previous literature, Macaulay (2005) has worked on this phenomena with a broader set of Algonquian languages. However, there have been no account proposed for the complex agreement mechanism observed. The Cyclic Agree approach introduced by Béjar & Rezac (2009) explains the syntactic derivations for the prefix and theme sign agreement for the singular paradigm in Ojibwe, which is also an Algonquian language, reasonably well. However, it fails

to extend to both the analyses of the plural paradigm and the different PH effects observed in the agreement system of Menominee.

This paper then proposes a mechanism to account for the complex derivations observed in this language. In particular, one of the proposals is that third person needs not to be licensed. Then, the study argues that instead of having 1 probe account for a whole agreement system in a language, the number of probes is proposed to be equal to the number of hierarchies existing in the language. This analysis suggests a more flexible solution to the displacement agreement puzzle. This modified Cyclic Agree mechanism could potentially provide insight into related Algonquian languages such as Meswaki, Micmac, and Blackfoot,... where more than one active hierarchy is found.

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Many thanks are due to Rajesh Bhatt and Jeremy Hartman for a great deal of discussion of this work. In addition, I would like to thank the participants of LING 604 in Spring 2015 and the Syntax seminar at UMass as well as the the audience of CLS 52 for helpful questions and comments. All errors are of course my own. Responsibility for shortcomings rests with me.

### *Abbreviations*

1	first person
2	second person
3	third person
DIR	direct
INV	inverse
LOC	local person
NL	non-local person
SG	singular
PL	plural

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# Italian as a voice language without voice assimilation

Bálint Huszthy

Laryngeal Realism (LR) claims that Romance languages are voice languages, that is, they exhibit a two-way voicing contrast and they have regressive voice assimilation. Empirical tests prove that those claims are only partially right for the case of Italian, which in fact presents [voice] opposition, but not assimilation. Since Italian phonotactics restrict the appearance of coda consonants, the laryngeal phonology of Italian is tested here through loanword adaptation and foreign accent analysis. This study attempts to demonstrate, through several phonetic examples and some related phonological arguments, that Italian is a true voice language which lacks Regressive Voice Assimilation (RVA).

## *1. Introduction*

### *1.1. Preliminary*

Italian probably belongs to the most curious languages spoken in Europe, at least from a phonological approach — inter alia, by its extremely severe phonotactic restrictions, its unique syllable structure and the related phonological consequences, etc. —; nonetheless, its extraordinarily huge dialectal fragmentation makes it an inexhaustible source for linguistic research. The purpose of this paper is to draw attention to an underdescribed phonological phenomenon in Italian: *voice assimilation*<sup>1</sup>, or rather to its proposed absence in the synchronic phonology of Italian.

From the point of view of laryngeal phonology, Italian behaves like a prototypical Romance language, that is, it is characterised by a two-way laryngeal opposition based on the marked [voice] feature (cf. Krämer 2009). At the same time — exactly for its singular phonotactic patterns —, certain phenomena cannot be tested on the native vocabulary. This includes, whether voice assimilation actually exists in the synchronic phonology of Italian, or its traces are only lexicalised remains from a former era when sibilants used to get voiced before voiced consonants.

The only kind of obstruent cluster is /sC/ in Italian, and although /s/ usually is realised as voiced before voiced consonants, its voicing shows rather strange characteristics as well, for instance it is also triggered by sonorants and does not take place on word boundaries (cf. Bertinetto & Lopporcaro 2005). At any rate, /s/ seems to be an untrustworthy element as far as

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<sup>1</sup> The term *voice assimilation* will be specified and explained in section 2.1.

this crucial question is concerned, since it is liable to show deviant behaviour from several phonological aspects (cf. Marotta 1995; Bertinetto 1999, 2004; Baroni 2014).

For that reason, there is a need to extend the monitoring criteria beyond the native vocabulary of Italian, and to test speakers' reactions in the pronunciation of loanwords containing laryngeal variables and in the articulation of foreign accents by Italians. In this paper, I carry out an examination related to the current laryngeal system of Italian, presenting data from loanword tests and foreign accent analyses.

### 1.2. The corpora

The initial idea for this study arose during a project dealing with the foreign accent of Italian speakers. The project was based on the observation that, despite the peculiar dialectal differences among Italian varieties, native speakers tend to pronounce foreign languages with a very similar, phonologically almost identical foreign accent (cf. Huszthy 2013).<sup>2</sup>

The Italian foreign accent offers an innovative way to reanalyse the synchronic phonology of Italian, since foreign accent is fundamentally made up of the productive properties of L1 phonology. On this occasion, large speech data were recorded in three cities of Italy (Gorizia, Florence and Naples), with the participation of 68 informants, who were asked to read out various sample sentences in foreign languages which they had previously studied (they could choose from English, French, German and Spanish). In addition, they were involved in spontaneous conversations in English.

The demand to focus specifically on voice assimilation emerged when the typical Italian s-voicing was in large number encountered among the data, mostly before sonorants, e.g. (Eng.) [z]leep, [z]nake, [z]wimming; (Ger.) *Lebensmittel* 'food' [s] → [z], (Fr.) *franchement* 'frankly'[ʃ] → [ʒ], etc. (cf. Huszthy 2013).

However, as it turned out, this kind of consonant voicing was valid only in the case of sibilants, while other obstruents all tended to preserve their voice specifications in a consonant cluster, e.g. (Ger.) *län*[gs]t 'for a long time', *glau*[bt] 'think 3SG', *gi*[bt] *es* 'there is'; (Eng.) *u*[pg]rade, *sur*[fb]oat; etc. Moreover, even sibilants were not voiced at word boundaries, e.g. (Sp.) *I*[z]la[s] *Baleares* 'Balearic Islands', *mucha*[s] *gracias* 'thank you very much', unlike in native Spanish pronunciation. On the basis of these sporadic occurrences, I set up the hypothesis that voicing assimilation must be a defective process in the synchronic phonology of Italian, and this then had to be verified by another survey.

The second part of the corpus used in this paper consists of different speech recordings made in soundproof studios: first at the Research Institute for Linguistics of the Hungarian Academy of Sciences, and then at the Linguistic Laboratory of the Scuola Normale Superiore di Pisa. These recordings consisted of loanword tests prepared with the SpeechRecorder software. The informants had to repeat 19 Italian sample passages five times. These passages contained 93 target words with various laryngeal variables (such as obstruent clusters and final voiced obstruents to test accidental final devoicing as well).

The research is still in progress; so far, 15 Italian speakers have been recorded, who come from different parts of Italy (from Veneto, Trentino, Emilia-Romagna, Lombardy, Tuscany,

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<sup>2</sup> The results of these investigations manifest that the dialectal differences between the foreign accents of Italians are more phonetic than phonological. The basic structural properties of the foreign accents of Italians broadly coincide, mostly from the aspect of syllable structure, which affects the main characteristics of the Italian foreign accent. These considerations also suggest that the productive part of Italian phonology (which is transferred to the foreign accent) must be more uniform than the dialectal situation looks like.

Lazio, Campania, Apulia, Calabria and Sardinia), which is an important factor allowing for the comparison of dialectal accents.

For the future, further recordings are being planned, in order to potentially cover every dialectal cluster of Italy. In any case, the data collected so far are deemed sufficient enough to draw initial conclusions about the synchronic laryngeal properties of Italian phonology.

## 2. Italian as a voice language

### 2.1. Laryngeal Realism and Regressive Voice Assimilation

Based on the notion of *Laryngeal Realism* (henceforth LR),<sup>3</sup> languages which exhibit a two-way laryngeal contrast may be classified into two categories, according to the markedness of either the [voice] or the so called [spread glottis] feature.

In the traditional view of generative phonology (such as in Wetzels & Mascaró 2001), two-way laryngeal contrasts are generally simplified to the activity of a single [voice] feature, while a phonological role is not assigned to the well-known aspirating properties of some Germanic languages (cf. Iverson & Salmons 2008). LR breaks with these traditions and sets up a dichotomy between true *voice languages* on the one hand (such as Slavic and Romance languages), in which the laryngeal opposition is based on the [voice] feature, and *aspiration languages* on the other (such as Germanic languages), in which the marked phonological feature, [spread glottis], is related to the typical aspiration of obstruents. The supporters of LR assert that the aspiration encountered in Germanic languages is not only a phonetic effect, but it also has considerable phonological consequences (cf. Balogné Bérces & Huber 2010).

Voice languages and aspiration languages essentially differ, because only in voice languages are “thoroughly voiced stops” present, which in phonetic terms means that voiced plosives (such as [b, d, g]) in utterance-initial position appear with an early voice onset time (VOT) lead, that is, they are effectively voiced (cf. Iverson & Salmons 2008). On the other hand, in aspiration languages, initial stops appear with a short-lag VOT, so they are not really voiced from an acoustic point of view. In these languages, obstruent voicing is possible only in intersonorant position (between vowels or sonorants, mostly by lenition), while, in voice languages, voiced obstruents have their own voice value (which is considered active and so it can spread).

Conversely, voiceless stops are generally unaspirated in voice languages, and their acoustic shape is similar to the case of initial “voiced” stops in aspiration languages (viz. they have a short-lag VOT). Instead, in the latter category, voiceless stops are heavily aspirated (with a long-lag VOT), and aspiration is also the main phonological criterion of the laryngeal contrast, indicated by the [spread glottis] feature.

Another (both phonetic and phonological) property of voice languages lies in the presence of *Regressive Voice Assimilation* (henceforth RVA), which is absent in aspiration languages. RVA consists in the sharing of [voice] values between adjacent obstruents, from the right towards the left, viz. the consonant to the right transfers its positive or negative voice value to the one on the left. As a result, two obstruents which are specified differently for voice underlyingly, cannot appear strictly next to each other on the surface: they either have to be both voiced or both voiceless. The default direction of the assimilation is *regressive*, because it is always the rightmost obstruent’s underlying voice specification which determines the voice value of the cluster. This assimilation is an unconditioned postlexical process, so it is not

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<sup>3</sup> For details cf. Iverson & Salmons 1995, 1999; Jessen & Ringen 2002; Honeybone 2002, 2005; Beckman, Jessen & Ringen 2009, 2013; Cyran 2011, 2014; etc.

sensitive to word or morpheme boundaries, and it takes place with no regard to the phonological environment (cf. Cser 2015). In addition, we must note that vowels and sonorants (such as [l, m, n, r]) do not usually participate in RVA (with a few exceptions), because they are not specified for [voice]. (Cf. Petrova et al. 2006; Kiss & Bárkányi 2006; Siptár & Szentgyörgyi 2013; etc.)<sup>4</sup>

RVA has two possible configurations: when the rightmost member of the cluster is voiceless, we can talk about *devoicing* by assimilation ( $D + T \rightarrow TT$ , where D stands for voiced obstruents and T for voiceless ones), and when the rightmost obstruent is voiced, we can talk about *voicing* ( $T + D \rightarrow DD$ ). RVA is usually symmetrical in voice languages, that is, it works in both directions. However, the “functional load” of the two types of RVA (voicing and devoicing) can also be different: for instance, devoicing appears to be a more simple process than voicing, both in phonetic and in phonological terms (cf. Section 4). This fact will be important in our case as well, because in a language with defective RVA (like Italian) the optional appearance of the assimilation can be asymmetrical, since devoicing is more frequent in the data than voicing (as we will see in section 4).

Before proceeding, we must remark that the literature on LR does not claim that RVA must obligatorily be present in voice languages. All the same, we hypothetically assume that it must, at least from a phonological point of view. In order to definitely prove that we would need a complex typological survey on voice languages, which has not been done (yet). But we can maintain that in those voice languages which have already been analysed in the framework of LR (mostly Slavic languages and Dutch), RVA has always been identified. In addition, the data found in Italian suggest that Italians need to resolve (or avoid) obstruent clusters with differing voice values, and therefore they use various repair strategies. These do not include those from RVA, which apparently are not included in their phonological store (for details see section 3.3). During a comparison with bilingual speakers, however, it was found out that RVA can be acquired by Italians and if acquired can be used more often than other repair strategies for solving obstruent clusters (cf. section 4). Consequently, we will assume that the correlation found in other voice languages between the phonetic voiced-voiceless contrast and RVA is not accidental but systematic, and then the lack of RVA in Italian is unexpected, thus marking the language an exceptional voice language.

## 2.2. Romance languages in Laryngeal Realism

The literature on LR generally claims that Slavic and Romance languages are voice languages, similarly to some other languages like Dutch, Tamil, Hungarian, etc. On the other hand, most of the Germanic languages are considered aspiration languages, as well as some Celtic languages and also Turkish, Mandarin and Cantonese Chinese, Somali, etc. Besides this, in several other languages a more than two-way laryngeal contrast can be found, e.g. in Armenian, Thai, Hindi, other Chinese varieties, etc. (cf. Beckman, Jessen & Ringen 2013).

Notwithstanding, it must be pointed out that LR was initially based on the claim that the laryngeal system of Germanic languages basically differs from the traditional theory

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<sup>4</sup> In an Optimality Theory approach, which will be used later, RVA is basically due to the high ranking of two constraints: AGREE — obstruent clusters should agree in voice — and ID-VOICE (preson.) — a presonorant consonant should be faithful to underlying voice specification — (Jessen & Ringen 2002; Petrova et al. 2006; Siptár & Szentgyörgyi 2013). These two constraints are responsible for eliminating all those candidates from the analysis which do not assimilate two adjacent obstruents in voice, or change the voice value of the rightmost consonant of the cluster.

(mentioned at the beginning of section 2.1), and so the theory was elaborated mostly from the point of view of aspiration languages. Of course, a theoretical framework which deals with such an extreme categorical distinction, like LR between voice and aspiration languages, cannot be perfect and it surely does not even intend to. But from a phonological approach, it is definitely useful to contemplate natural languages with this typology-oriented perspective, and explore some common characteristics which make them similar and perhaps structurally cohesive. However, the typology of two-way laryngeal oppositions formulated in LR has several inconsistencies as well, since there are languages which are not perfectly “suitable with this system”, and mostly voice languages, which do not always fit with the generalisations and restrictions made for them within LR.

For instance, certain voice languages like Cracow Polish (Cyran 2011, 2014), show only phonetically and not phonologically conditioned voicing patterns. Others, like Italian, apparently, do not have RVA while voice is distinctive (Huszthy 2016); moreover, in many spoken varieties of Italian (primarily in the dialects and in the regional Italian of Calabria and of Tuscany) heavily aspirated voiceless stops appear which are in opposition with unaspirated voiced ones (Marotta 2008; Stevens & Hajek 2010; Nodari forthcoming). The literature on LR also knows languages which went through a category-change and became voice languages from aspiration languages, like Dutch or some Scottish varieties of English (Iverson & Salmons 2003, 2008; Honeybone 2005). But apparently there are also aspiration languages which in certain aspects behave as voice languages, for instance Swedish, which has a laryngeal opposition between thoroughly voiced unaspirated and voiceless aspirated stops, on the basis of the marked [spread glottis] feature (Ringen & Helgason 2004; Helgason & Ringen 2008).<sup>5</sup>

The Romance languages are barely mentioned in the literature on LR as being classic examples for voice languages in general, particularly Spanish and French are discussed (cf. Iverson & Salmons 1995, 1999; Honeybone 2002, 2005). A typological survey would certainly be needed so as to determine whether all of the Romance languages are actually voice languages; nonetheless, their classical phonological descriptions allow us to suppose that they are, where voice opposition and voice assimilation are always mentioned, even if not analysed in the framework of LR (see Mateus & d’Andrade 2002 for Portuguese<sup>6</sup>, Wheeler 2005 for Catalan, Krämer 2009 for Italian, Chitoran 2002 for Romanian, etc.).

As far as RVA is concerned, I carried out an improvised pilot examination with a few Spanish, Catalan, Portuguese, French and Romanian informants (meeting them in conferences or at other journeys): I asked them to pronounce two loanwords: *vodka* and *football*, since the first one contains a DT cluster and the second one a TD cluster. The results are as follows: (1) shows the pronunciation patterns of the Romance speakers, while (2) is a comparison made with English, German, Hungarian and various Slavic speakers (I made the transcriptions on the basis of repeated perceptive observations and not spectrograms, since the recordings were not well analysable with acoustic softwares).

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<sup>5</sup> Actually, Italian shows very similar laryngeal behaviour to Swedish (i.e. thoroughly voiced stops vs. aspirated voiceless stops), with the general difference that in LR Italian is supposed to be a voice language, while Swedish an aspiration language. However, the supposition that the marked laryngeal feature is [spread glottis] in Swedish and [voice] in Italian is also supported by my corpus, since the aspiration of voiceless stops does not seem to be really consistent in the data but optional.

<sup>6</sup> However, the description of RVA in Portuguese is ambiguous, because Mateus & d’Andrade (2002) claim that only /s/ participates in voicing, as the only possible input of the assimilation. At the same time, they give transcriptions of other obstruent clusters preserving the different voice values, without an explanation, e.g. (Port.) o[bt]er ‘to obtain’, a[dk]uirir ‘to acquire’, a[bs]urdo ‘absurd’, quar[tz]o ‘quartz’ (Mateus & d’Andrade 2002:42).

- |     |                    |                                       |  |
|-----|--------------------|---------------------------------------|--|
| (1) | (Fr., Rom., Port.) | <i>vo</i> [tk] <i>a</i>               | <i>foo</i> [db] <i>all</i>               |
|     | (Sp., Cat.)        | <i>vo</i> [θk] <i>a</i>               | <i>fú</i> [ðb] <i>ol</i>                 |
|     | (Italian)          | <i>vo</i> [d(ə)k] <i>a</i>            | <i>foo</i> [t(ə)b] <i>all</i>            |
| (2) | (Eng., Ger.)       | <i>vo</i> [dk <sup>h</sup> ] <i>a</i> | <i>foo</i> [t <sup>h</sup> b] <i>all</i> |
|     | (Slavic, Hung.)    | <i>vo</i> [tk] <i>a</i>               | <i>foo</i> [db] <i>all</i>               |

As is evident from the transcriptions, the non-Italian Romance informants all applied RVA when pronouncing the loanwords, both in the DT and in the TD case, choosing the place or the manner of articulation for the first consonant which was allowed by L1 phonotactics.<sup>7</sup> However, the Italian informants of the corpus (cf. section 1.2) never used RVA during the pronunciation of the same loanwords: they usually inserted a schwa between the two consonants (e.g. *vod*[ə]*ka*, *foot*[ə]*ball*), or they just preserved the underlying voice values of the consonants, without schwa-epenthesis: *vo*[dk]*a*, *foo*[tb]*all*. On the other hand, German and English control informants pronounced each target consonant as voiceless, but the [k] of *vodka* was slightly aspirated; while Slavic and Hungarian speakers presented the same patterns as French, Portuguese and Romanian ones.

We obviously cannot draw any far-reaching conclusion on the basis of these examples, but until the appearance of a general typology about Romance languages within LR, we may assume that they have RVA.

### 2.3. Italian among Romance languages

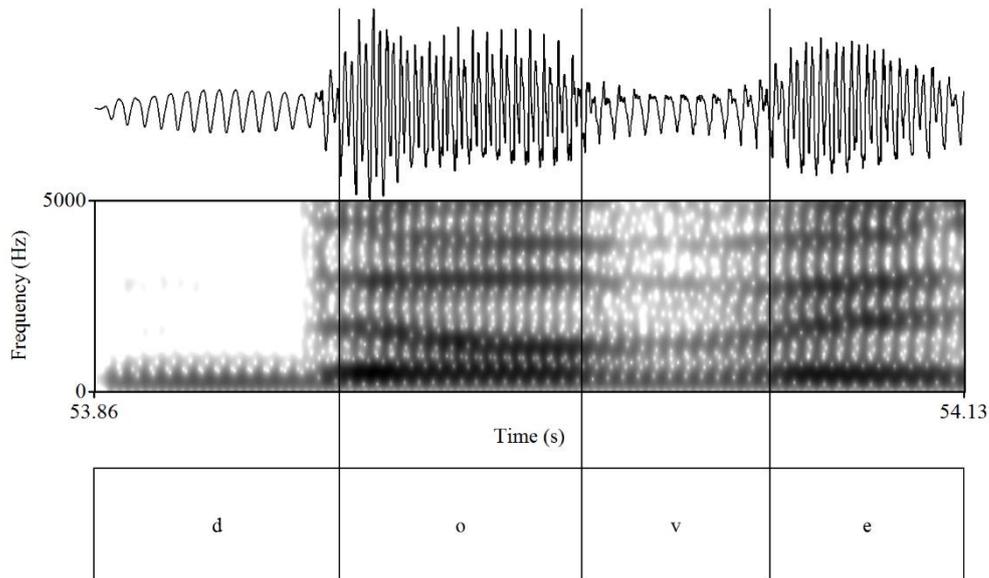
The phonetic characteristics of initial voiced stops /b, d, g/ found in Romance languages are in compliance with the LR claim for voice languages: they are pronounced with prevoicing, that is, in acoustic terms, with a long VOT lead, or in articulatory terms, vocal cords are in vibration even during the closure phase of the consonant.<sup>8</sup> The recordings of my corpus reveal that the same voice patterns are valid for Italian as well; consider the wave form and spectrogram in (3). Phonetic analyses were made with Praat (Boersma & Weenink 2016).

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<sup>7</sup> From a strictly phonetic approach regressive voice assimilation is considered gradient, rather than categorical (Snoeren & Segui 2003), at the same time, from the point of view of phonology even partial assimilations are considered here RVA. In both approaches Italian laryngeal phonology shows an explicit difference compared to other Romance languages.

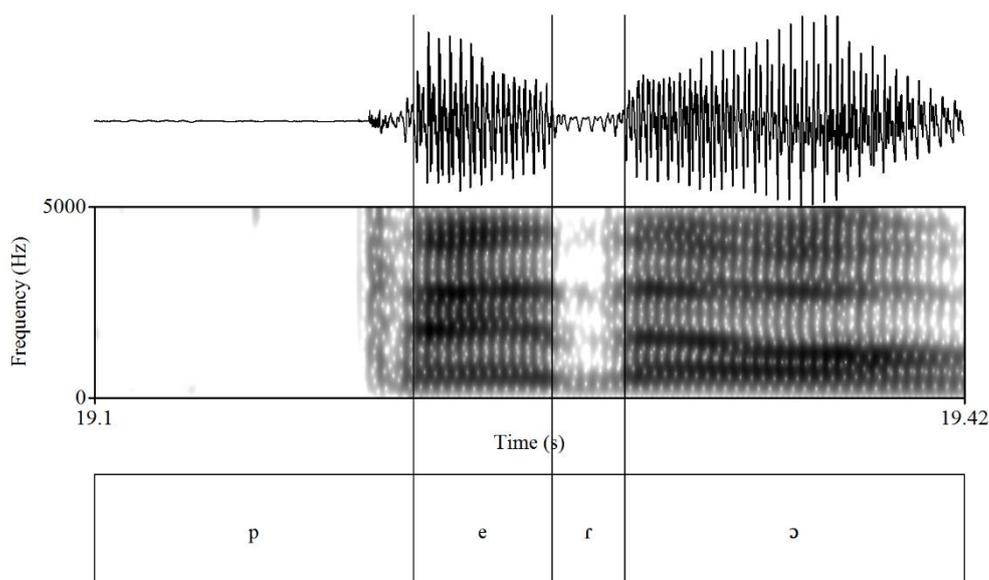
<sup>8</sup> In order to check the phonetic shape of the initial voiced stops in Romance languages I used the recordings of the Romance Phonetics Database of the University of Toronto (<http://rpd.chass.utoronto.ca/>).

- (3) Praat diagram of the (It.) word *dove* ‘where’ (21-year old female informant from Calabria)



A clearly prevoiced word initial [d] is shown in (3): a typical exponent of initial voiced stops attested in the recordings. On the basis of their phonetic shape, Italian seems to be a voice language, since aspiration languages do not have any similar prevoicing pattern in initial stops. Thus, voiced stops can be considered thoroughly voiced in Italian, even in initial and in non-intersonorant position, unlike in aspiration languages. As far as voiceless stops are concerned, consider the wave form and spectrogram in (4).

- (4) Praat diagram of the (It.) word *però* ‘but’ (25-year old female informant from Apulia)



The initial voiceless stop in (4) shows a moderately short VOT lag after the release. The phonetic shape of voiceless stops, however, may induce a discussion about the laryngeal system of Italian, because the VOT lag found in Italian is typically longer than in other voice languages in general, but, it is shorter than in aspiration languages. A few studies about Italian stop-aspiration (Soriano 1996; Stevens & Hajek 2010; Nodari forthcoming) report that the phenomenon is quite salient, and it is attested more or less in every Italian variety, but primarily in the dialects of Calabria (where the VOT lag is more or less the double compared to the other dialects). At the same time, Stevens & Hajek (2010) claim that aspiration is not perceived by native speakers, except in the Calabrian varieties, and Nodari (forthcoming) notes that aspiration is also an important sociolinguistic marker for Calabrian speakers.

Despite the typical post-aspiration of voiceless stops, also found in the corpus, I argue that Italian is still a voice language, because the slightly aspirated voiceless stops are in phonological opposition to thoroughly voiced stops: thus the marked feature of the laryngeal opposition is indeed [voice] and not [spread glottis]. This argument is also supported by the spectrogram in (3), where, in the pronunciation of a Calabrian speaker, a thoroughly voiced initial stop appears. Conclusively, aspiration is a usual property of Italian voiceless stops, but it has no phonological consequences in the laryngeal system of Italian, it is only a phonetic factor.

### 3. The absence of RVA in Italian

#### 3.1. The decline of Italian voice assimilation in a diachronic perspective

As was mentioned in section 1.1, by its severe phonotactic restrictions, diachronically all obstruent clusters were dismissed in Italian, apart from /sC/. The Latin word *abstractus* ‘abstract’ is an excellent example for the illustration of the two most common repair strategies to resolve obstruent clusters: (Lat.) *a*[pst]ra[kt]us → (It.) *a*[st]ra[tt]o; where the first stop, [p], was completely omitted, while the second one, [k], was eliminated by regressive place assimilation. Note that in Latin there was voice assimilation (which justifies the transcription of the /bst/ cluster as [pst]), testified by many written examples, but it was asymmetrical (only devoicing), since Latin had only DT clusters (cf. Cser forthcoming). In Romance languages, however, RVA is symmetrical, as was shown in (1).

Historically, Italian seemed to be normal prototypical Romance language, or from the LR approach, a very ordinary voice language: it had RVA, but the only possible input of the assimilation was /s/ before consonants, since there were not any obstruent clusters other than /sC/. Sonorants probably did not trigger voicing initially, as neither did Latin have sibilant voicing before sonorants (moreover, [s] was usually deleted before voiced consonants in Latin, cf. Cser forthcoming). Obstruent plus sonorant clusters indeed do not show voicing in Italian, e.g. (It.) *tre* \*[dr] ‘three’, *flauto* \*[vl] ‘flute’, *pneumatico* \*[bn] ‘pneumatic’.

Most probably, sonorants acquired a role as triggers of s-voicing at a later stage, presumably due to an analogical extension. Since RVA had been working only in /sC/ clusters, assimilation was lexicalised, and then probably /s/ got analogically voiced before any other [voiced] consonant, not only the obstruents. In (5), I gather some classic examples to illustrate the ordinary patterns of RVA in /sC/ clusters in the Italian native vocabulary.

(5)

/s/ + voiceless obstruent	/s/ + voiced obstruent	/s/ + sonorant
[sp]aro ‘gunshot’	[zb]arra ‘barrier’	[zm]ettere ‘to stop’
pa[st]a ‘pasta’	[zd]egno ‘disdain’	[zn]ello ‘thin’

<i>a</i> [sk] <i>oltare</i> ‘to listen’	[zg] <i>abello</i> ‘footstool’	[zl] <i>itta</i> ‘sled’
[sf] <i>era</i> ‘sphere’	[zv] <i>eglia</i> ‘alarm clock’	[zr] <i>otolare</i> ‘to unroll’

As is shown in the examples, /s/ appears as voiceless before voiceless obstruents, while it regularly becomes voiced before voiced obstruents and sonorants. The usual intervocalic appearance of /s/ is voiced in the Northern varieties, and voiceless in the Central and Southern varieties (the main isogloss between the two realisations roughly coincides with the La Spezia-Rimini line).<sup>9</sup> Word initial /s/ is always voiceless before a vowel, e.g. [s]*era* ‘evening’, [s]*ubito* ‘immediately’, etc.; and so is word-final /s/, e.g. *ga*[s] ‘gas’, *lapi*[s] ‘pencil’, etc.

The voicing of /s/ before voiced consonants was hence lexicalised in the phonology of Italian, and could keep working without any disturbance through centuries. However, with the mass arrival of loanwords in the twentieth century, Italian phonology had to face an enormous challenge: plenty of other obstruent clusters. As circumstances show, Italian eventually could not handle this situation, because RVA apparently fails to work in non-/sC/ clusters. However, the sequence of a voiced and a voiceless obstruent is clearly ill-formed in Italian phonology, because speakers desperately try to avoid that situation with all sorts of repair strategies, e.g. place assimilation, schwa-epenthesis or deletion. Sometimes they cannot afford any of them though, in which case, an entirely voiced obstruent may immediately follow an entirely voiceless one, or vice versa.

### 3.2. The weirdnesses of Italian preconsonantal s-voicing in synchrony

For synchronic phonological reasons, I prefer the term “preconsonantal s-voicing” instead of RVA, for the process of Italian phonology described in section 3.1. In fact, from a synchronic point of view, the voicing of /s/ before voiced consonants has rather weird characteristics in Italian phonology, which makes it a slightly different process from the classical RVA of voice languages (described in section 2.1).

The first problem with the “voice assimilation” in Italian, which has already been mentioned even in the past decades (cf. among others Rohlf’s 1966; Muljačić 1972; Nespór & Vogel 1986; Marotta 1995; Bertinetto 1999, 2004), is that it ignores the obstruents which are not /s/. Muljačić (1972:91) observes that in certain old Latinising words and in ethnic names “pseudo groups” of differently voiced consonants may appear, for instance there is no voice assimilation between adjacent obstruents in words like *afgano* ‘Afghan’, *substrato* ‘substratum’, *abside* ‘apse’, *feldspato* ‘feldspar’, *tungsteno* ‘wolfram’, etc. The list could be extended by some examples from my corpus as well, e.g. *eczema* [ek’dʒɛ:ma], *su*[dk]*oreano* ‘South Korean’, *uzbeco* [uʦ’be:ko] ‘Uzbek’, *Sam*[pd]*oria*, *Mike Bongiorno* [kb], etc. Even these sporadic examples suggest that Italian s-voicing probably does not equal with the classical RVA, the postlexical process which automatically unifies every obstruent cluster for [voice].

A second problem concerns the /s/ directly, which usually does not get voiced before voiced consonants at word boundaries. The lack of s-voicing in this position was previously reported by Bertinetto (1999), who cites only one example: *autobu*[s] *bianco* ‘white bus’. Several other examples may be added to this one from my corpus as well, e.g. (in the native vocabulary and in commonly used Latin formulas) *lapi*[s] *giallo* ‘yellow pencil’, *Agnu*[s] *Dei* ‘Lamb of God’;

<sup>9</sup> The Northern-Southern differences in intervocalic s-voicing are generally conserved in the pronunciation of standard Italian as well, apart from the dialects (cf. Krämer 2003, 2009). The classic example for the geographical extension of intervocalic s-voicing is the Italian pronunciation of the *Pisa* toponym: the inhabitants of the city usually pronounce its name with a voiceless [s]: *Pi*[s]*a*, while to the north of the city its name changes to *Pi*[z]*a*.

(and in proper names) *Jame[s] Bond*, *Pier[s] Bro[z]nan*, etc. (examples from the foreign accent of Italians were already mentioned in section 1.2). Bertinetto (1999) argues that it can happen only because voice assimilation in Italian is exclusively lexical. However, this is not a good argument, since assimilations are universally considered postlexical processes (cf. Nespor 1993; Marotta 1995). In addition, sometimes the lack of s-voicing manifests itself at morpheme boundaries as well, inside the domain of a single word, e.g. *iceberg* [sb], *baseball* [sb], *facebook* [sb]; *Las Vegas* [sv], etc. (at the same time, all of these words can be also pronounced in Italian with s-voicing); moreover, Bertinetto (1999) also cites a similar example, *gasdotto* ‘pipeline’, which is often pronounced by Italians with a voiceless [s].<sup>10</sup>

As a conclusion related to the diachronic path of Italian voice assimilation described in section 3.1, I deduce the following assumption: the fact that in the synchronic phonology of Italian adjacent obstruents with different voice values may appear, has probably also changed the diachronic status of preconsonantal s-voicing. We have seen that even /s/ may remain voiceless before voiced consonants at word or morpheme boundaries, and the same is true in recent loanwords as well, even monomorphemically (for examples see section 3.4). The phenomenon of s-voicing, accordingly, appears to be optional in the synchronic phonology of Italian, so we may assume that instead of being assimilatory process, it is now working similarly to the lenition processes of aspiration languages which result in spontaneous voicing.

### 3.3. The lack of RVA in DT and TD clusters

As was described in the previous sections, in the synchronic phonology of Italian adjacent obstruents do not have to share their voice values at the surface form (except when the first member of the cluster is /s/), that is, there is no RVA. Since in the native vocabulary of Italian the only possible obstruent cluster is /sC/ — due to phonotactic reasons — we decided to ascertain the functions of RVA in loanwords. In Table (6) I report a few international loanwords from the corpus, in which RVA would be required in voice languages, but it is not in Italian.

(6)

		Target word	Prevalent Italian pronunciation
a.	D + T	<i>vodka</i>	[ˈvɔːdka], [ˈvɔːdəkə], [ˈvɔddəkə]
b.		<i>ragtime</i>	[regˈtʲajmə], [retˈtʲajmə]
c.		<i>gangster</i>	[ˈgɑŋgster], [ˈgɑŋgæster]
d.		<i>sovchoz</i>	[ˈsɔːvkɔts]
e.		<i>pingpong</i>	[pɪŋgˈpɔŋgə], [pɪŋgəˈpɔŋgə]
f.		<i>Singspiel</i>	[ˈsɪŋgʃpil], [ˈsɪŋgəʃpil]
g.	T + D	<i>McDonald's</i>	[mekˈdɔːnaldə], [mekˈdɔːnalts]
h.		<i>outdoor</i>	[ˈawtdɔr], [ˈawtədɔr], [ˈawddɔr]
i.		<i>football</i>	[futˈbollə], [futəˈbollə], [futtəˈbollə]
j.		<i>upgrade</i>	[apˈgrejdə], [apəˈgrejdə], [appəˈgrejdə]
k.		<i>surfboard</i>	[ˈserfbordə], [serfˈbordə]
l.		<i>catgut</i>	[katˈgattə], [katəˈgattə]

<sup>10</sup> Bertinetto (1999) identifies a dialectal difference here: he claims that Northern Italians usually apply s-voicing in the word *gasdotto*, while Central-Southern Italians usually do not. Nevertheless, his considerations in this issue primarily concern the syllabification of /sC/ clusters and not specifically the voice assimilation.

Among the 93 target words which were planted into the Italian sample passages of the corpus (cf. section 1.2) there were 60 which included an obstruent cluster with a voiced and a voiceless element. These clusters hardly ever appeared with RVA in the pronunciation of the 15 Italian informants, the speakers mostly applied other repair strategies in order to resolve them, or they did not solve them at all, at least from a phonological point of view. However, spectrograms manifest that the speakers seemingly “suffered” while pronouncing two differently voiced adjacent obstruents, they tended to separate the two consonants with every possible repair strategy, apart from RVA which apparently was not included in their phonological store.

The most common pronunciation patterns, as indicated in Table (6), were schwa-epenthesis, the gemination of the first consonant of the cluster and place assimilation. Schwa-epenthesis did not seem context sensitive, it could appear under any circumstances, but on the whole it was present only in less than the half of the occurrences (according to a preliminary measurement in about 38% of the data). Regressive place assimilation was quite rare, and its appearance depended on the quality and the order of the consonants: apparently it was able to happen only when the place of articulation of the first consonant was posterior to the second one, e.g. examples (b) and (h) of Table (6), moreover: *rugby* [ˈrebbi], *McBacon* [mɛbˈbeːkɔn] (all of these examples, however, occurred without assimilation as well, with schwa-epenthesis or only with the conservation of the voice values). The gemination of the first stop was frequent mostly in the case of the Southern Italians, and usually it was combined with schwa-epenthesis.<sup>11</sup> Conclusively, not all of the examples occurred with schwa-epenthesis or place assimilation, but all of them occurred with the simple juxtaposition of the voiced and the voiceless obstruent.<sup>12</sup>

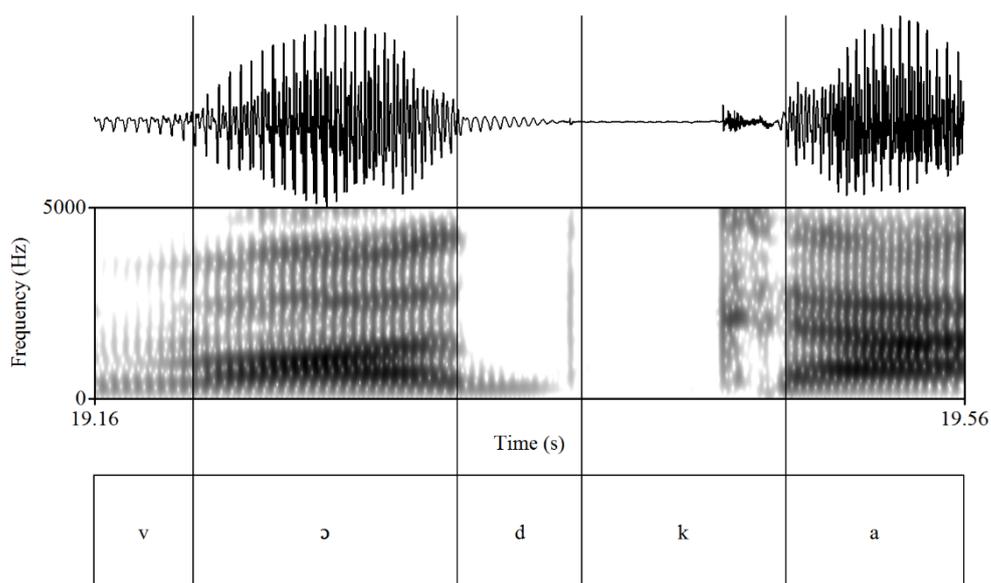
Apart from the phonological repair strategies seen previously in this section, from a phonetic approach, other repair strategies also appeared. These strategies may have helped the articulation of the informants: they are small articulatory gestures which may be barely noticed auditorily, but spectrograms reveal them. Generally there is not a clear borderline between the voiced and the voiceless segment: at the encounter of the two consonants speakers usually leave a minuscule silence (about 5-10 ms), or they just turn down the voicing of the voiced consonant (in DT cases), or vice versa: they turn up the voice value a bit later (in TD cases).

In Praat diagram (7) I show a typical Italian realisation of a DT cluster in the word *vodka* (22-year old female informant from Emilia-Romagna), where the two differently voiced consonants appear without schwa-epenthesis; however, the voiced /d/ seemingly goes towards devoicing before the voiceless /k/.

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<sup>11</sup> In another paper I argued, however, that the gemination of the first stop in a cluster is an independent repair strategy from schwa-epenthesis, used first of all by Southern Italians. The main reason for the gemination is the conservative behaviour of the synchronic phonology of Southern Italian varieties, according to which gemination is better than deletion, and in order to prevent deletion (or place assimilation which includes the deletion of the [place] feature) they geminate the first consonant of the cluster (cf. Huszthy 2015).

<sup>12</sup> Schwa-epenthesis was always missing in the case of fricative + obstruent clusters, such as in examples (d) and (k) of Table (6), and also in *afgano*, *kashmir* and *kalashnikov*. Apparently fricative + obstruent clusters are not ill-formed in Italian phonotactics, they are only unattested in the native lexicon (apart from /sC/, of course).

(7) Italian pronunciation of the word *vodka* ['vɔ:dka]

Among the data there are, obviously, intra-speaker and inter-speaker variations as well, for instance the same informant pronounced the same word *vodka* also with schwa-epenthesis and with a less evident transition between the voiced and the voiceless obstruent. But the spectrogram in (7) attests that there is, in fact, a transition between the two elements, even if the first one actually appears as a thoroughly voiced consonant (which is indicated by the long voice lead on the spectrogram, and the waves on the wave form), while the second one is entirely voiceless (and also lightly aspirated). Still, the fact that the informant slightly turns down the voice of the /d/ before the /k/, means that the coarticulation of the segments is problematic for the speaker, and the situation needs to be solved somehow.

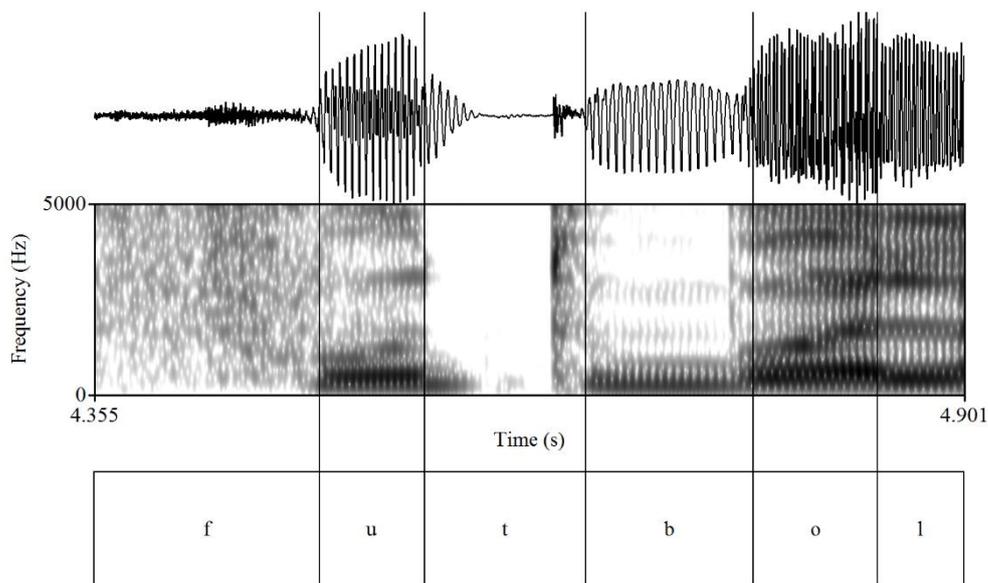
Spectrograms also reveal another very important phonetic fact about the lack of RVA in Italian (which has phonological consequences as well), that is, the first stop is almost always released before the second one (the release of the /k/ on spectrogram 7 is indicated by the grey slash at the end of the segment). In voice languages which have RVA, the release of the first stop is usually rare, since the two consonants are coarticulated.<sup>13</sup> Apparently, Italians cannot coarticulate the members of an obstruent cluster, which means that obstruent clusters are ill-formed in Italian phonotactics (more precisely, only stop + consonant clusters are ill-formed, cf. footnote 11). From a phonological point of view, the release of the first consonant means that the two elements do not form a real cluster, they are just two consonants in a phonetic juxtaposition. Phonetically, on the other hand, the release enables the speakers to change their

<sup>13</sup> The coarticulation of the members of a cluster, however, also depends on phonetic factors, since perfect coarticulation is allowed only if the places of articulation of the two consonants are not too far from each other, or if different “articulatory devices” are involved, e.g. the tongue and the lips. For instance, in a word like *football* (cf. 6i) the coarticulation of the /tb/ cluster is possible, since /t/ is coronal and /b/ is bilabial; while in a word like *catgut* (cf. 6l) the perfect coarticulation of the /tg/ cluster is impossible, since the tip of the tongue must first leave the coronal place of articulation (evoking the release of the /t/) in order to be able to use the back of the tongue for the /g/. All the same, in true voice languages RVA is working in both words, e.g. in the Hungarian pronunciation there is always voice assimilation in *catgut* (Hung. accented) [kɒdɡut], even if the /t/ is always released, unlike in the typical Italian pronunciation, where RVA never happens.

articulatory equipment after the pronunciation of the first consonant, and this fact may allow the segments to preserve even the opposite voice specification.

In Praat diagram (8) I illustrate the TD case of missing RVA, through an Italian pronunciation of the word *football* (20 year-old female informant from Calabria).

(8) Italian pronunciation of the word *football* [fut'bol]

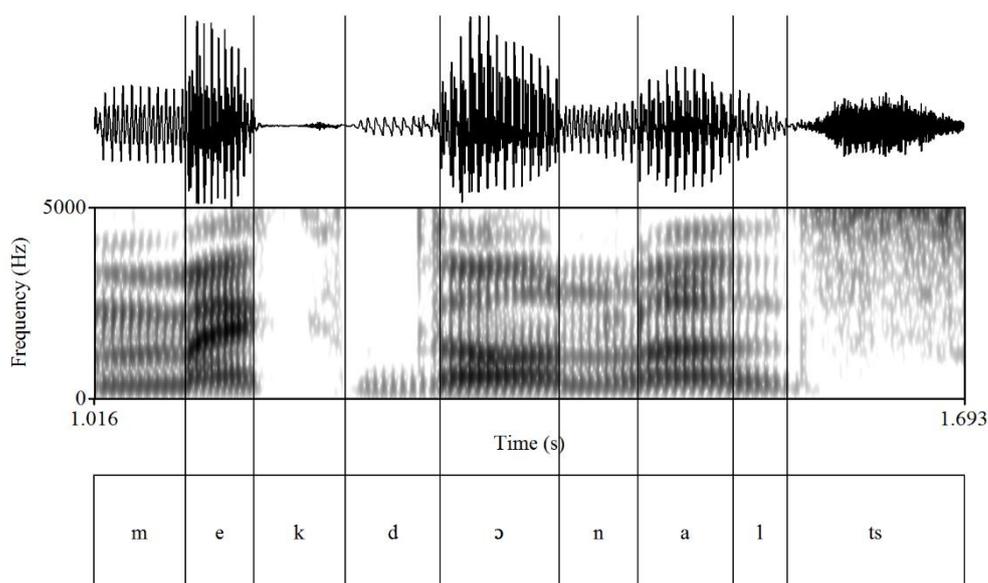


In the pronunciation of our next informant a slightly aspirated, mostly voiceless /t/ and a fully voiced /b/ appear immediately following each other, without schwa-epenthesis. The /t/ is evidently released before the /b/, which contributes to the fact that it can preserve its voicelessness, and it has a 18 ms long VOT lag, which points out that its articulation definitely ends as voiceless. At the same time, 30% of its closure phase appears to be voiced (which is manifested by the voice lead at the beginning and by the initial waves), acoustically it is more or less a hybrid sound between a voiced and a voiceless realisation. This fact is important, because it testifies that the adjacency of a voiceless and a voiced obstruent is ill-formed in Italian, and still, the speakers cannot apply RVA on the whole to resolve ill-formed obstruent clusters.<sup>14</sup>

My next example concerns a more evident absence of RVA in Italian pronunciation, with the use of the word *McDonald's* (25 year-old male informant from Veneto).

<sup>14</sup> This example gave me the opportunity to verify with a small pilot experiment that the presence or absence of voice assimilation in languages also affects the speakers' perception. I made three Italian and three Hungarian speakers listen to the recording (which spectrogram 8 is derived from): Italians all admitted to hear a voiceless /t/ in the word *football*, while Hungarians perceived a voiced /d/ at the same place. Consequently, for these Hungarian speakers even a 30% of voicing was enough to identify a consonant as voiced (similar results for voice perception may be found in B ark anyi & M ady 2012), for Italians though, it was not enough. They probably need a longer voice lead to recognise a stop as voiced.

(8) Italian pronunciation of the word *McDonald's* [mek'dɔ:nalʦs]<sup>15</sup>



In example (8) we can see an entirely voiceless /k/ before a fully voiced /d/. Albeit, even in this case we may notice a very short phonetic hesitation between the two consonants: the /k/ is released again, and the voicing of the /d/ comes 8 ms after the release of the /k/; however, this delay is completely insignificant from a perceptive point of view. For a quick comparison, in aspiration languages the cluster /kd/ in *McDonald's* is pronounced with two equally voiceless unaspirated obstruents: [kt]. On the other hand, in other voice languages the cluster becomes entirely voiced by RVA: [gd]. On the contrary, in Italian both consonants are able to preserve their original voice specifications, and the cluster can be realised on the surface as [kd].

Eventually, we must admit that the phenomena presented in this section do not mean that RVA is 100% missing from the corpus. Among the data there are occurrences which could be interpreted as voice assimilation, but these cases, on the whole, give less than 5% of the resolutions. We can certainly conclude from this low ratio that Italians do not use RVA as a phonological process for resolving obstruent clusters of different voice values. In the following section, I argue that the tendency of /s/ to become voiced before voiced consonants does not behave as RVA in the synchronic phonology of Italian.

### 3.4. Optional voicing in /sC/ clusters

As we have seen in Table (5), and as it was recounted in section 3.1, Italian used to have RVA in the past, and it was restricted only to /sC/ clusters, for phonotactic reasons. Preconsonantal s-voicing, however, has certain characteristics in the synchronic phonology of Italian which cast doubt on its nature as a postlexical process, and therefore as productive assimilation.

According to the data of the corpus, in recent loanwords and in the foreign accent of Italians the typical preconsonantal s-voicing of Italian phonology is not as consistent as in the native

<sup>15</sup> The word *McDonald's* in Italian is usually pronounced without the final /s/; in the sample sentence, however, the informants pronounced the word with the preservation of the final /s/.

vocabulary (where /s/ surfaces as voiced before any voiced consonant, except across word boundaries). We may presume that the phenomenon has been completely lexicalised in Italian phonology, and so it has already lost its productivity. And even if not completely, its phonological status has certainly been changed in synchrony compared to diachrony.

Marotta (1993) cites modern loanwords which were adopted in Italian with an apparent assimilation of the /s/ before voiced sonorants, e.g. [z]mog, [z]moking, [z]lalom, [z]lang; to which other examples may be added, e.g. [z]nack, [z]nob, [z]nowboard, [z]lide, [z]logan, [z]mile, etc. At the same time, s-voicing seems to be regular only word-initially, while in word-internal position there is vacillation between voiced and voiceless (or partially voiced) realisations of /s/ even before obstruents, also noted by Bertinetto (1999), who cites the example *gasdotto* [zd/sd] ‘pipeline’ (cf. section 3.2); other examples: *frisbee* [zb/sb], *kasbah* [zb/sb/ʒb/ʃb], *fosgene* [zdʒ/sdʒ] ‘phosgene’, etc.

This fact may have diachronic origins, since in the native vocabulary of Italian voiced word-internal /sC/ clusters are virtually nonexistent (Krämer 2009: 209). Presumably, the lexicalisation of s-voicing has also been limited by position, and it is regular only word-initially. In fact, preconsonantal s-voicing is found in the corpus mostly in word-initial position, and when /sC/ is word-internal, s-voicing appears to be optional in recent loanwords and in the foreign accent of Italians (cf. Table 9).

The feasible lexicalisation of the process is also highlighted by another fact, that is, /s/ usually is realised as voiced in word-initial position before the glide /w/ as well, which diachronically was not a trigger of voice assimilation. In the Italian native lexicon, indeed, /s/ remains voiceless before glides, e.g. *suono* [sw] ‘sound’, *suicidio* [sw] ‘suicide’, *suario* [sw] ‘swineherd’; *siamo* [sj] ‘we are’, *siepe* [sj] ‘hedge’, etc. At the same time, the informants of the corpus pronounced the /s/ as voiced before the glide /w/, e.g. (Eng.) [z]wimming, [z]weet, [z]weat, [z]wing, [z]WAT, etc. Before /j/, however, the /s/ preserved its voicelessness, e.g. (Sp.) [s]iempre ‘always’, (Eng.) *suit* [sj], *sue* [sj], etc. In this case /w/ behaves more as a consonant (more precisely as a sonorant) and /j/ as a vowel, since /s/ before vowels remains voiceless in word-initial position. The appearance of s-voicing before /w/ may be the result of an analogical extension as well, since the voicing of /s/ is usual before the near homorganic /v/.

Therefore, the lexicalisation of s-voicing in word-initial position already covers not only the obstruents and the sonorants, but a glide as well. Conclusively, the fact that preconsonantal s-voicing has a new trigger is an argument in favour of the assumption that its phonological status has been transformed in synchrony.

In Table (9), several target words are listed from the sample passages of the corpus which contain word-internal /sC/ clusters, in order to show that s-voicing vacillates in recent loanwords of Italian.

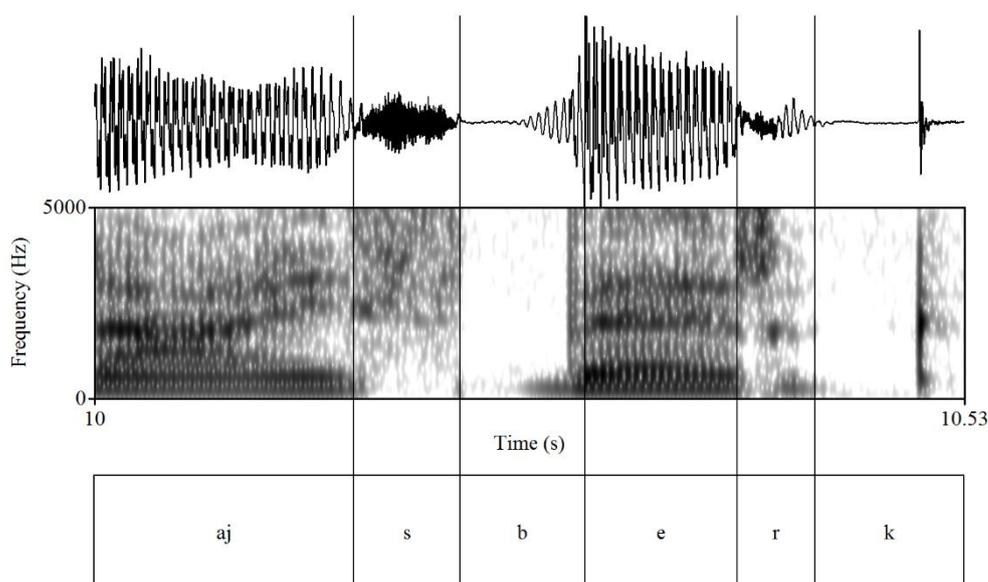
(9)

	Target word	Prevalent Italian pronunciation
a.	<i>iceberg</i>	[ˈajzbergə], [ˈajsbergə], [ˈajsberk]
b.	<i>frisbee</i>	[ˈfri:zbi], [ˈfri:sbi]
c.	<i>backslash</i>	[bekˈzleʃ:(ə)], [bekˈsleʃ:(ə)]
d.	<i>krishna</i>	[ˈkri:ʃna], [ˈkri:sna], [ˈkri:zna]
e.	<i>kalashnikov</i>	[kaˈla:ʃnikov], [kaˈla:ʒnikov]
f.	<i>kashmir</i>	[ˈka:ʃmir]
g.	<i>uzbeco</i> ‘Uzbek’	[uzˈbɛ:ko], [utsˈbɛ:ko], [udzˈbɛ:ko]
h.	<i>samizdat</i>	[saˈmi:dzdat], [saˈmi:tsdat]

In Table (9), we see several examples of optional s-voicing in word-internal position. In (9a) and (9b), /s/ is followed by obstruents, in (9c-h) by sonorants. In examples (9d-h) other sibilants also appear: the post-alveolar [ʃ, ʒ] and the affricates [tʃ, dʒ], so we can see that, in fact, not only /s/ but every sibilant may participate in preconsonantal s-voicing.<sup>16</sup> Examples (9g) and (9h) reveal that obstruents which are not /s/ may only be voiced before voiced consonants if they also hold the [sibilant] feature by affrication.

In Praat diagram (10), I show a typical Italian pronunciation of the word *iceberg* (25-year old female informant from Rome), in sentence-final position, as it will reveal that final obstruent devoicing is possible in Italian.

(10) Italian pronunciation of the word *iceberg* ['a:jsberk]



The spectrogram in (10) reveals several characteristics of the productive phonology of Italian regarding the vowels as well,<sup>17</sup> but now we shall focus on consonants only. The /s/ is clearly voiceless in this case, since the voice lead is empty on the spectrogram, and even the articulation of the /b/ starts without voicing (maybe this fact allows the /s/ to remain completely voiceless).<sup>18</sup> However, in the second part of its closure phase, the /b/ becomes voiced (at about 50% of its closure phase is voiced), and eventually it is released as a thoroughly voiced stop.<sup>19</sup>

<sup>16</sup> Perhaps we could also change the name of the process to *preconsonantal sibilant-voicing*, but it is not convenient, since actually every sibilant may appear in Italian phonology as an allophone of the /s/ phoneme. Several examples can be found in the dialects of Italy, e.g. in the central-southern dialects [s] is generally in complementary distribution with five other sibilant variants, depending on the phonetic context: the coronal [z], the post-alveolars [ʃ, ʒ] and the affricates [tʃ, dʒ] (cf. Rohlfs 1966).

<sup>17</sup> Such as the lengthening of the stressed vowel before the glide /j/ which casts doubt on the status of the vowel plus glide sequence as a falling diphthong (the issue whether glides form a diphthong with adjacent vowels is one of the crucial questions in synchronic Italian phonology).

<sup>18</sup> Nonetheless, the beginning of the articulation of the /b/ is not entirely voiceless, since light gray spots appear in the voice lead, and the wave is not absolutely straight, either: this undoubtedly means that the underlying variant of this consonant is not a /p/, but a /b/ which appears as slightly devoiced on the surface.

<sup>19</sup> We have previously seen other examples where it was the first member of a DT cluster to lose its voice value at the margin of a voiceless consonant, like in the case of *vodka* (see spectrogram 7). The case of the example in

Consequently, in Praat diagram (10) we can see a classical Italian realisation of a word-internal /sC/ cluster without RVA, where the articulation of the two differently voiced obstruents is facilitated by the retarded voice-release of the second consonant.

Among the data of the corpus, the /sb/ cluster within the word *iceberg* is pronounced several times with s-voicing: [zb], and also several times without. When the /s/ is not realised as voiced, the voice-release of the /b/ usually starts a little bit later, but finally it is always released as a voiced [b], otherwise we could suppose a progressive spreading of voicelessness as well. The [sp] cluster with two entirely voiceless obstruents does not appear on the recordings though, so I claim that the rightmost member of an obstruent cluster always preserves its underlying voice specification in Italian, but its voice is not active, since it does not necessarily evoke RVA. In the case of sibilant + consonant clusters, however, sibilants may spontaneously become realised as voiced, by the same effect as lenition in aspiration languages. (These considerations are not valid in word-initial position, where s-voicing is regular, since lexicalised.)

The other relevant fact in spectrogram (10) is the realisation of the word-final /g/, which apparently undergoes devoicing. Final devoicing, according to Iverson & Salmons (2011), is a property of voice languages, as long as the underlying voice value of the consonant is removed (the voicing contrast is neutralised), while in aspiration languages, obstruents are underlyingly voiceless and may have final fortition (where final stops appear not only as voiceless, but also heavily aspirated, as in German).

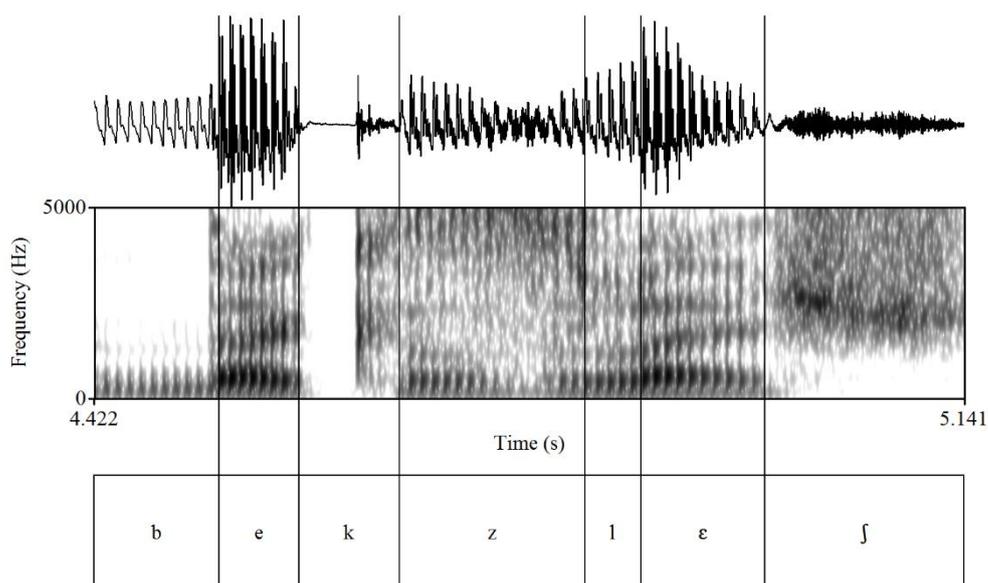
The fact that final /g/ is underlyingly voiced in Italian is highlighted by its other occurrences, where it appears as effectively voiced even in word-final position. The final /g/ of *iceberg* is always voiced in the recordings when followed by a schwa, and it is mostly voiceless when it is in absolute final position; but in a few cases it preserves its positive voice value even without a schwa.

Other target words of the corpus also demonstrate that final devoicing is possible in Italian, e.g. some final schwa-less occurrences of *keba*[p], *hydrobo*[p], *fastfoo*[t], *aparthei*[t], *Blitzkrie*[k], *hotdo*[k], etc. However, since diachronically there are no obstruent-final words in Italian (usually not even loanwords) — again for phonotactic reasons — this phonetic context is relatively recent in Italian phonology. But, it seems possible synchronically, as loanword experiments manifest. These findings are also in accordance with the behaviour of other Romance languages which have both pre-sonorant voicing and final devoicing, such as Catalan and Spanish (cf. Bárkányi 2013). Consequently, evidence from obstruent ending loanwords provides further support that Italian behaves as a voice language from the perspective of LR.

In Praat diagram (11), I show typical Italian pronunciation of the word *backslash* (28-year old male informant from Calabria).

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(10) is rather similar: now it is the voiced member of a TD cluster which becomes voiced slightly later, for the same reason: it is the transition between the voiceless and the voiced consonant, as a phonetic repair strategy.

(11) Italian pronunciation of the word *backslash* [bek'zleʃ:]

The Praat diagram in (11) is rather peculiar, since it violates the basics of phonetics and phonology: it represents a triplex consonant cluster /ksl/, two members of which do not behave at all as it would be expected. Firstly, the /s/ before the sonorant /l/ is realised as voiced, secondly, the /k/ before the voiced [z] remains voiceless. The first event is still understandable, since in a few languages there is consonant voicing before sonorants (like Spanish, Catalan and some Slavic languages); the second one is quite surprising, though, both from a phonetic and a phonological point of view.

The example in (11) helps us understand why we do not consider Italian preconsonantal s-voicing as RVA. If the voicing of /s/ before /l/ were an actual assimilatory process, even the /k/ before the voiced [z] would be voiced by the same assimilation. However, in the spectrogram in (11), we see a considerably aspirated voiceless [k<sup>h</sup>] before the entirely voiced [z], so voicing does not spread leftwards (the aspiration is not surprising, if we consider that the informant is from Calabria, and aspiration is usual in Calabrian, cf. section 2.3).

The /ksl/ cluster of the word *backslash* appears as [kzl] in the pronunciation of other Italian informants as well, but the most common pattern is [ksl], without any voicing in the obstruents. However, the /k/ before [z], in case there is s-voicing, never surfaces as voiced. There are several occasions when the /s/ is only partially voiced: it starts as a voiceless [s] after the /k/ and it ends as a voiced [z] before the /l/; even its duration is longer than the usual, as if there were two coronal sibilants in the cluster, a voiceless and a voiced one: *ba[kszl]ash*, with a hypothetical barrier between [s] and [z]. The example in (11) is the most obvious turnout between voiceless and voiced consonants in the corpus, and, perhaps not accidentally, this is also the case with the longest aspiration phase of the /k/ (35 ms of VOT lag), which phonetically certainly helps the laryngeal change between opposite voice values.

At the same time, we may observe in the spectrogram that the voiced [z] is not simply voiced in this case, but almost sonorised, since it has a visible formant contour, similarly to vowels or sonorants. If we treated [z] here as a sonorant, all the strange laryngeal activity attested in the cluster would acquire an explanation, since sonorants are not specified for [voice], so the voicing of /s/ is lenition, and there is no need for RVA in the case of the /k/. There are also

proposals in phonology to treat [z] as a sonorant, rather than an obstruent, due to its strange phonological behaviour which causes problems in many languages (cf. Baroni 2014). However, in our case this explanation would not be totally satisfactory, since it would leave other issues unanswered, for instance the frequent voiceless appearance of the same segment in other occurrences, mostly before obstruents, like in the case of (10). I will still return to this question, though, during the OT analyses in the following section.

Our most important conclusions at the end of this section are undoubtedly those regarding the optional nature of s-voicing in word-internal position. Apparently, preconsonantal s-voicing is lexicalised in Italian phonology only in word-initial position (probably by analogy), and word-internally it works as a facultative lenition process and not as assimilation.

### 3.5. Phonological considerations

On the basis of the phonetic facts which were discussed in previous sections, several phonological consequences have already been mentioned occasionally. The most important of all is the claim that preconsonantal s-voicing cannot be considered a postlexical assimilatory process in the synchronic phonology of Italian. Therefore, Italian in fact appears to be a voice language without RVA.

All the same, previous studies of voice vs. aspiration languages make us suppose that once voice is present in a system it will be phonologically active. Even a strictly phonological interpretation of LR requires voice to be phonologically active (i.e. participate in phonological processes — spread, in particular) in a language for it to unambiguously qualify as a voice language — otherwise, there is no evidence against the opposite. Therefore, I assume that the sequence of a voiced and a voiceless obstruent is phonologically ill-formed, and so the current behaviour of Italian phonology is exceptional.

The lack of RVA in Italian phonology certainly has diachronic origins as well (cf. section 3.1), but it can also be analysed from a purely synchronic approach. According to the optimality theoretic analyses of voice assimilation encountered in the literature (cf. Jessen & Ringen 2002; Blaho 2003; Ringen & Helgason 2004; Petrova et al. 2006; Krämer 2003, 2005, 2009, 2012; Siptár & Szentgyörgyi 2013), we can establish a relevant constraint set for the preconsonantal s-voicing of Italian phonology (see 12 and 13).

(12) OT-constraints relevant to RVA:

- a. AGREE: Consonant clusters agree in voice.
- b. IDENT-VOICE: Obstruents are faithful to underlying voice specification.
- c. ID-PRESO-VOI: Presonorant obstruents are faithful to underlying voice specification.<sup>20</sup>
- d. \*VOICE: There are no voiced obstruents.

As it was mentioned in footnote 3, in voice languages RVA is basically due to the high ranking of constraints (12a) and (12c): the former requires adjacent obstruents to share their voice values, while the latter determines the default direction of RVA, which is regressive. The role of constraint (12c) has been already illustrated even phonetically by example (10), where in the word *iceberg* the underlying voice specification of the postsibilant and presonorant /b/ always remains preserved. Constraint (12d) is the general prohibition of voiced obstruents, which is usually low ranked in voice languages and high ranked in aspiration languages.

<sup>20</sup> The *presonorant* term is referred here to sonorants, vowels and also voiced obstruents.

I assume that, in Italian, the markedness constraint AGREE (12a) is not as highly ranked as in other voice languages, because the phonology of Italian shows strong conservative tendencies synchronically (cf. Huszthy 2015).<sup>21</sup> The deletion of the [voice] value of underlying consonants is not allowed, and these conservative tendencies even make every stop released before a consonant, with the purpose of conserving them entirely. The release of the first stop often causes schwa-epenthesis as well, but these vowel insertions are not interpreted here phonologically, only as a phonetic side effect of the release. Consequently, the absence of RVA in Italian is due to the high ranking of the faithfulness constraints (from the IDENT-VOICE family), which anticipate the markedness constraints which require voice accordance (such as AGREE).

Apart from the main constraints regarding RVA, listed in (12), we will still need a specification of the IDENT-VOICE constraint family. As it seems obvious, the first problem with voice assimilation in Italian phonology regards the sibilants, namely the coronal fricatives. We have seen in Table (9) that practically every sibilant may get voiced before voiced elements. We have also seen that other fricatives (like /f/) do not get voiced at all (cf. footnote 11), and neither do other non-fricative coronal obstruents (cf. section 3.1). As a conclusion, it seems logical to me to specify constraints (12b) and (12c) as specific to coronal fricatives, namely sibilants (see 13a and 13b).

(13) OT-constraints relevant to preconsonantal s-voicing in Italian:

- a. ID-VOI[-SIB]: Obstruents are faithful for voice, unless the sibilants.
- b. ID-PRESON-VOI[-SIB]: Presonorant obstruents are faithful for voice, unless the sibilants.
- c. s-[son]: /s/ behaves like a sonorant if it is followed by a sonorant.

In (13a) and (13b) constraints (12b) and (12c) were specified and provided by the [-sibilant] feature, so they leave out of consideration sibilants when they act, which seems to be an important restriction for Italian phonology.<sup>22</sup>

As far as constraint (13c) is concerned, Blaho (2003) and Szentgyörgyi & Siptár (2013) introduce a similar constraint for Hungarian /v/ (v-[son]) which shows different consonantal behaviours in different phonetic contexts: sometimes it appears as an obstruent [v], other times as a sonorant [v]. They assume that Hungarian /v/ is not specified for the feature [sonorant] in the underlying representation, and the value of this feature is determined in allophones according to the v-[son] constraint, which specifies /v/ as a [+sonorant] if it is followed by a [+sonorant] segment (Blaho 2003:27). The situation appears to be very similar in the case of Italian /s/ as well. I assume that /s/ may behave in Italian as a sonorant if it is followed by a sonorant (which is expressed by constraint 13c), that is, it becomes voiced and continuant in this context (phonetically it will acquire a formant contour, as we have seen in spectrogram 11).

Accordingly, on the basis of constraints (13a) and (13b), every non-coronal obstruent must preserve its underlying voice specification in the surface form, like /b/ in the (It.) word *a[b]side* ‘apse’, which does not get devoiced before the voiceless [s]. Similarly, not even coronals can

<sup>21</sup> These conservative tendencies concern mostly the prohibition of underlying segment deletion: apparently Italians prefer to add elements to the output rather than delete any element of the input. In this manner regressive place assimilation is no longer productive for solving obstruent clusters (since place assimilation involves the deletion of the [place] feature), and similarly, neither is RVA productive in synchrony. Italians rather apply schwa-epenthesis or the gemination of the first stop, instead of deleting a feature or a segment (Huszthy 2015).

<sup>22</sup> In a former paper of mine (Huszthy 2016) I applied two different specifications for the IDENT-VOICE constraint family: [-coronal] and [-fricative], which seemed to me a less language specific solution than [-sibilant]. However, for the reason of simplicity, I return here to using a single restriction of the constraints, [-sibilant], which now requires less textual explanation as well.

change their underlying voice value if they are not fricatives. This is the reason why sonorants do not trigger voicing in *tre* ‘three’, *treno* ‘train’, etc.<sup>23</sup>

(14)

a. /sb/arra	ID-PRESO-N-VOI [-SIB]	ID-VOI [-SIB]	AGREE	*VOICE	s-[son]
[sb]arra			*!	*	
☞ [zb]arra				**	
[sp]arra	*!	*			
b. a/sm/a	ID-PRESO-N-VOI [-SIB]	ID-VOI [-SIB]	AGREE	* VOICE	s-[son]
☞ a[zm]a				*	
a[sm]a			*!		*
c. vo/dk/a	ID-PRESO-N-VOI [-SIB]	ID-VOI [-SIB]	AGREE	* VOICE	s-[son]
☞ vo[dk]a			*	*	
vo[tk]a		*!			
vo[dg]a	*!	*		**	
d. ba/ksl/ash	ID-PRESO-N-VOI [-SIB]	ID-VOI [-SIB]	AGREE	* VOICE	s-[son]
☞ ba[ksl]ash			*		*
☞ ba[kzl]ash			*	*	
ba[gzl]ash	*!	*		**	

As I mentioned before, I assume that the AGREE constraint (12a), which is responsible for the most part for voice assimilations in voice languages, is ranked lower in Italian phonology than the faithfulness constraints regarding [voice]. That is the main reason why obstruent clusters usually preserve their underlying voice specifications in Italian. The two ID-VOI constraints are indeed ranked higher, which allows sibilants to remain intact until the AGREE constraint. It is important to note that in Italian phonology AGREE is valid in the case of every consonant, not only obstruents, like in Petrova et al. (2006).

In the complex tableau in (14) we see the optimal realisation of four different inputs according to the laryngeal phonology of Italian. Example (14a) is from the native vocabulary of Italian, *sbarra* ‘barrier’, showing word-initial preconsonantal s-voicing, due to constraints (13a, b) and (12a), which eliminate candidates with devoicing or non-realised s-voicing. The situation is similar in (14b), where presonorant voicing occurs word-internally, in an earlier loanword of Italian, *asma* ‘asthma’. In the word *vodka* in (14c) there are no sibilants, and so the high ranked faithfulness constraints conserve the voice values of the input in the winning candidate. The most interesting case is (14d), where two optimal candidates appear, since both violate either of the two lower, unranked constraints. These results are in accordance with the data as well, since the two most common Italian realisations of the word *backslash* in the corpus were indeed equivalent to the two optimal outputs of analysis (14d).

<sup>23</sup> Another possibility to determine why only sibilants may get voiced in Italian phonology is to operate with the syllable structure, and specify that voice may spread only in syllable onset. This means that /s/ is realised as voiced when /sC/ clusters are tautosyllabic, and it does not when they are heterosyllabic (for other details in this perspective see Bertinetto 1999 and Huszthy 2016).

Consequently, the s-[son] constraint is supposed to be low ranked in Italian, so it may have a role only in specific conditions, like in the case of the word *backslash*. Apparently, /s/ before /l/ and after /k/ may appear as entirely voiced only if it behaves as a sonorant, like in (14d), where we have these two optimal candidates, one without s-voicing, where the voicing of /s/ is probably blocked by the previous voiceless obstruent, and the other solution where /s/ appears as a sonorant, like in spectrogram (11). The ranking of the constraints is summarised in (15).

(15) ID-PRESO-N-VOI [-SIB] » ID-VOI [-SIB] » AGREE » \*VOICE, s-[son]

In conclusion, the faithfulness constraints are high ranked in Italian, because of the conservatism of Italian phonology. The first ranked position of ID-PRESO-N-VOI [-SIB] is also justified by the fact that the laryngeal stability of the rightmost segment in a cluster is very high, as we have seen before (cf. the example in 10). Despite the strong conservatory tendencies of Italian, sibilants seem to be exceptional, and so they may be affected by voicing. If we intended to involve the aspiration processes of Italian voiceless stops too, we would need further constraints as well, such as SPECIFY, which requires obstruents to be specified for a laryngeal feature, so they cannot remain voiceless if unaspirated (Petrova et al. 2006).

Obviously, the OT-analysis in tableau (14) is only the first step towards a complete analysis of Italian preconsonantal s-voicing and of the lack of RVA. This first analysis is still strongly connected to the diachronic lines of Italian laryngeal system, so several further refinements are required to possibly reflect the current synchronic tendencies attested in the data.

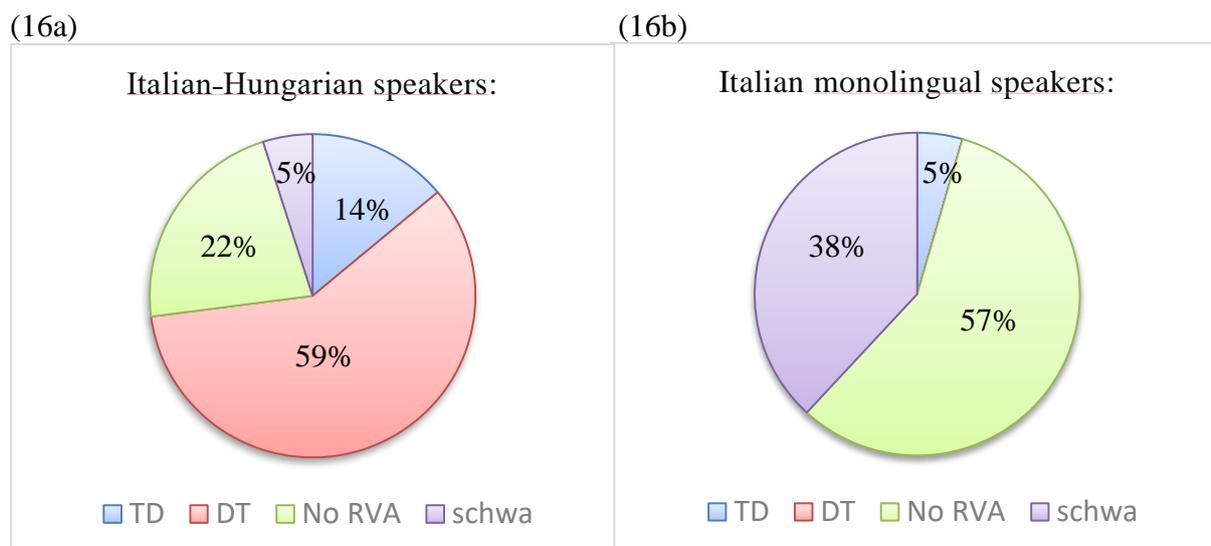
#### 4. Final arguments

The general conclusion of this paper is that the absence of RVA in a voice language can be phonetically real (as the current situation of Italian shows), but it is phonologically impossible.

My last argument to support this claim was reserved for the conclusion part of the paper, because it is still a hypothesis, but it is also quite promising for future research. There are five Italian speakers among my informants, who have acquired a very high level of Hungarian (two of them were bilinguals, the others have been living in Hungary for at least ten years). Unfortunately only two of them have been recorded in a soundproof studio (until now), but the others, too, show a really strange laryngeal behaviour despite being Italians: they apply RVA in their Italian speech. Even the two bilinguals are only near-bilinguals, since their dominant L1 is Italian (they were brought up in Italy by Italian-Hungarian parents), they speak Hungarian with a significant Italian accent, while in their Italian pronunciation there is not any element of foreign accent (according to the other Italian informants' opinion), except the fact that they use RVA, even if it is not perceived by other Italians.

On the basis of these findings I set up the hypothesis that the lack of RVA in Italian phonology may be remedied: if Italian gets into a strong contact with another voice language (which has RVA), speakers automatically acquire the process of voice assimilation, add it to their phonological repertoire and keep using it for resolving obstruent clusters as a repair strategy. In this manner RVA appears to be learnable, and it may replace other repair strategies. This is a further argument that RVA is phonologically an obligatory process in voice languages.

I carried out a preliminary comparison between the laryngeal behaviour of the two near-bilingual Italian-Hungarian informants and two randomly selected other Italian informants of my corpus (see the pie charts in 16). In total, they pronounced 764 obstruent clusters in the recordings (counting every repetition).



In the diagrams, blue refers to attested regressive voice assimilations in TD clusters (voicing by assimilation), while pink refers to the RVA in DT clusters (devoicing by assimilation). Green indicates the occurrences with no assimilation, when a voiced and a voiceless obstruent constitute a sequence without any repair strategies, while purple points out the evident schwa-epenthesis between the voiced and the voiceless consonants. (Ambiguous cases of partial voicing or devoicing were considered RVA if at least 50% of the voice lead was engaged).

This pilot examination evidently brings forward significantly different results in the case of the monolingual and the near-bilingual Italian speakers. As the 5% blue slice of chart (16b) shows, even the monolinguals produced some phenomena which can be interpreted as RVA, but this is an almost irrelevantly tight rate which does not allow us to conclude that these speakers use RVA as a phonological process; in addition, RVA was found in their pronunciation asymmetrically, only voicing and no devoicing.

On the other hand, the near-bilingual Italian speakers used RVA to resolve obstruent clusters in 81% of the total occurrences, out of which 59% was devoicing and 22% voicing, as chart (16a) shows. Curiously enough, not even they used RVA every time, which suggests that voice assimilation is a completely subconscious process for them.<sup>24</sup> Another interesting fact is the asymmetry in the distribution of RVA even in their pronunciation: in the case of devoicing (DT clusters) they used RVA in 100% of the occurrences, while in the case of voicing (TD clusters) only in 63% of the clusters. In the TD context, indeed, other solutions also appeared, like schwa-epenthesis (5%) and the complete absence of RVA (22%), as also for the majority of the monolingual Italian speakers. As we have noticed previously in section 2.1, the devoicing-type of RVA seems to be easier than voicing both phonetically and phonologically: now we have a confirmation for this claim even by this brief comparison.

One of the most interesting facts in the results regards the decreased number of schwa-epenthesis in the case of the near-bilingual speakers. The use of definitely fewer schwas is certainly in correlation with the presence of RVA in the phonological store of these speakers. Accordingly, they probably replace a repair strategy with another for resolving ill-formed obstruent clusters: since they have acquired RVA through language contact with Hungarian,

<sup>24</sup> As a comparison, I also used two Hungarian control informants (proficient learners of Italian), who read out the same sample passages in Italian: they used RVA every time in the target words, in 100% of the occurrences (obviously, only obstruent clusters are counted this time, since sonorants are not triggers of RVA in Hungarian).

they use voice assimilation rather than schwa-epenthesis. Indeed, schwa-epenthesis was found only in the case of DT clusters of these speakers when they did not apply RVA.

These preliminary results suggest that once Italians acquire RVA through a strong contact with another voice language (Hungarian in this case), they automatically add it to their L1 phonological repertoire, and they keep using it in L1 pronunciation. This is an argument in favour of the assumption that the lack of RVA is ill-formed in Italian phonology, and that voice languages must have RVA in obstruent clusters.

All of these considerations certainly need much deeper statistical analyses, and more bilingual Italian informants recorded in soundproof studio. However, this last section of the paper allows me to draw a final hypothetical conclusion: maybe the lack of RVA is only a provisional situation in the phonology of Italian. The problem was raised recently by the mass arrival of ill-formed obstruent clusters in loanwords and foreign proper names, but maybe with the increase of language contacts this problem will also be solved phonologically.

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# The adaptation of French liquids in Haitian

A test of the perceptual hypothesis

Benjamin Storme

Haitian Creole shows an asymmetry in the way it has adapted French liquids: the French lateral has a correspondent in Haitian in post-vocalic coda position, but the French rhotic was elided in this position. This paper provides the first empirical test of the hypothesis according to which this asymmetry is perceptually grounded, with the French coda rhotic being less perceptible and therefore harder to learn than the French coda lateral. The results are broadly compatible with the perceptual hypothesis: (i) the coda lateral was found to be more perceptible on average than the coda rhotic for French hearers in four different segmental contexts, and (ii) the coda lateral was never found to be less perceptible than the coda rhotic in any of those contexts. The results also suggest that the deletion vs. maintenance of a sound in a given context cannot be explained only in terms of whether this sound is above or under a certain perceptual threshold in this context, but that either a notion of average perceptibility or phonological regularization across contexts is also necessary.

## 1. Introduction

Both French and Haitian, a French-lexifier creole, have a rhotic phoneme, transcribed as the voiced uvular fricative [ʀ] in French and as the voiced velar fricative [ɣ] in Haitian. Even though the two rhotics are historically related, their distribution differs across the two languages. French onset rhotics were adapted as [ɣ] before unrounded segments and as [w] before rounded segments in Haitian, but coda rhotics were systematically elided (Tinelli 1981; Nikiema & Bhatt 2003; Brousseau & Nikiema 2006; Russell Webb 2010; Valdman 2015), without leaving a trace. As a result, words which were distinct in French became homophonous in Haitian. For instance, French *coup* [ku] ‘blow’ (noun) and *cours* [kuʀ] ‘class’ (noun) were both adapted as Haitian *kou* [ku] (Valdman 1996:470).<sup>1</sup> The patterns of adaptation of the French rhotic in Haitian in on-

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<sup>1</sup>Some words show  $\emptyset/\emptyset$  morphological alternations (e.g., *mèg* [mɛg] ‘thin’ and *mègri* [mɛgʀi] ‘thinned’ or *sik* [sik] ‘sugar’ and *sikre* [sikʀe] ‘sweet’). Some authors argue that  $\emptyset$  has to be present underlyingly in coda in Haitian

set and coda positions are illustrated in Table 1: French onset [ʁ] has a correspondent in Haitian (boldfaced), whereas French coda [ʁ] does not.

		French	Haitian	
Onset	#ʁV <sub>-round</sub>	rêver [ʁeʒve]	reve [ʁeʒve]	‘to dream’
	VʁV <sub>-round</sub>	serrer [seʁe]	sere [seʁe]	‘to clench’
	#ʁV <sub>+round</sub>	rose [ʁɔz]	wòz [wɔz]	‘pink’
	VʁV <sub>+round</sub>	zéro [zeʁo]	zewo [zewo]	‘zero’
Coda	VʁC	merci [mɛʁsi]	mesi [mɛsi]	‘thank you’
	Vʁ#	la mer [lamɛʁ]	lamè [lamɛ]	‘sea’

Table 1: Distribution of the rhotic in French and Haitian. Haitian data from Valdman (1996). The French rhotic is systematically transcribed as [ʁ], even though it might have variable realizations.

By contrast, other French consonants generally have a correspondent in Haitian in post-vocalic coda position, as illustrated in Table 2.

	French	Haitian	
VS#	tête [tɛt]	tèt [tɛt]	‘head’
VN#	pomme [pɔm]	pòm [pɔm]	‘apple’
VF#	richesse [ʁiʃɛs]	richès [ʁiʃɛs]	‘wealth’
VG#	portail [pɔʁtaj]	pòtay [pɔtaj]	‘gate’
Vl#	sel [sɛl]	sèl [sɛl]	‘salt’
VSC	saxophone [saksɔfɔn]	saksofòn [saksɔfɔn]	‘saxophon’
VNC	samedi [samdi]	samdi [samdi]	‘Saturday’
VFC	costume [kɔstym]	kostim [kɔstim]	‘suit’ (n)
VIC	Allemand [almã]	alman [almã]	‘German’

Table 2: Post-vocalic coda consonants in French and Haitian (S=stops, N=nasal stops, F=fricatives, G=glides). Haitian data from Valdman (1996).

Why did coda [ʁ] elide but no other coda consonants? The fact that the distribution of the Haitian rhotic ended up much more constrained than that of [l] in particular (Steele & Brousseau 2006:343-345) is mysterious from the perspective of Haitian’s substrate and superstrate languages: Gbe languages and French. The two sounds have the same distribution in French (both are licit in post-vocalic coda position) and in Gbe languages (both are illicit in post-vocalic coda position).

In French, [l] and [ʁ] belong to the same distributional class, namely the liquids (e.g., Tranel 1987). The elision of the rhotic in coda position appears sporadically throughout the history of French, but never to the same extent as in Haitian (Zink 1986; Russell Webb 2010; Gendrot 2014). In some varieties of French, the rhotic is subject to deletion in word-final clusters (e.g., Québec French *piasse* ‘dollar’ [pjɑs] < *piastre* ‘piastre’ [pjastʁ] and *livre* ‘book’ [livʁ] / [liv]). But this deletion also affects the lateral (e.g., Québec French *tabarnac* (swear word) [tabaʁnak] < *tabernacle* ‘tabernacle’ [tabɛʁnakl] and *règle* [ʁɛgl] / [ʁɛg]; see Côté 2004). In Haitian,

(e.g., /mɛʁv/; see Nikiema & Bhatt 2003). But the form without [ʁ] does not carry any phonetic reflex of [ʁ].

both the lateral and the rhotic were deleted in this environment (e.g., *syèk* [sjɛk] ‘century’ < *siècle* [sjɛkl] and *liv* ‘book’ [liv] < *livre* ‘book’ [livʁ]). In Québec French, post-vocalic coda rhotics may be vocalized (e.g., *porte* [pɔʁt] / [pɔʁt]), whereas post-vocalic coda laterals are generally not (Côté 2004:168-171). But this is different from the Haitian pattern: in Haitian, post-vocalic coda [ʁ] is deleted and not vocalized.<sup>2</sup> The distribution of Haitian [l] and [ʁ] in post-vocalic coda position is not a direct reflection of French: to our knowledge, there are no French varieties where the deletion of the coda rhotic is as systematic and the distributions of [l] and [ʁ] as divergent as in Haitian.

Modern Gbe languages have a uvular fricative, transcribed as [ʁ] (Capo 1991:55), and a lateral, transcribed as [l] (Capo 1991:49). Both are illicit in coda position, as consonants are in general in these languages. The distribution of the rhotic and the liquid in Haitian therefore does not reflect Gbe either. Finally, the pattern of rhotic deletion vs. lateral maintenance in post-vocalic coda position is also observed in French loanwords in some Gbe languages, for instance in Fon (e.g., [dīlētê] < *directeur* [diʁɛktœʁ] vs. [kólù] < *col* [kɔl]; see Gbéto 2000:34 and Gbéto 2000:54). This suggests that (i) the pattern observed in Haitian is not just an accident, and (ii) it may have its source not just in French or in Gbe, but in the contact of the two languages.

One general approach to language change in language contact situations, including in creolization, assumes that linguistic patterns from a source language are adapted or not depending on how hard they are to learn (e.g., Thomason & Kaufman 1988:49-50). In the specific case of the adaptation of French liquids in Haitian, Russell Webb (2010) hypothesized that the difficulty is perceptual in nature, in line with Ohala’s (1981) theory of “the listener as a source of sound change.” The asymmetry between French and Haitian follows from a perceptual asymmetry between the post-vocalic coda liquids in French, with the rhotic being less perceptible than the lateral and therefore harder to learn. The fact that both onset [l] and onset [ʁ] were retained can be explained either as the result of them being familiar enough to Gbe speakers ([ʁ] and [l] occur in onset position in Gbe) or perceptually salient enough in the input. Onset positions are expected to be generally the most perceptible positions for consonants, based on the availability of release transitions.

I propose a specific implementation of this hypothesis, the “perceptual filter” model. This model has two steps, shown in (1): the input of the superstrate language (e.g., French) is filtered through a perceptual filter influenced by the linguistic experience of a speaker of the substrate language (e.g., Gbe), as detailed in (1a), and the perceptually filtered input form serves as an input to phonological learning, as detailed in (1b). The grammar resulting from the learning of the superstrate language by speakers of the substrate language might differ both from the superstrate grammar and substrate grammar. This is because the input from the superstrate grammar has been perceptually filtered and therefore can differ from the original input.

#### (1) The perceptual filter model

The surface representations (SR) in a Creole language are derived from the superstrate SRs in two steps:

<sup>2</sup>In French, mid vowels are lowered before coda [ʁ] as a result of the *loi de position*, which requires all mid vowels to be low before coda consonants. Mid vowels remained low in Haitian after the elision of coda rhotics. This could be taken as a vocalic reflex of the rhotic. However, synchronically, the low mid vowels coming from *loi de position* contexts and contrastive low mid vowels are not distinguishable, at least in the orthography (e.g., *respè* [ʁɛspɛ] from *respect* [ʁɛspɛ] vs. *rivyè* [ʁivjɛ] from *rivière* [ʁivjɛʁ]). Also, this phenomenon is limited to mid vowels.

## a. Perceptual filter

Superstrate SRs are perceptually filtered by hearers accustomed to the sound patterns in their native language (=the substrate):

- i. Familiar sounds in familiar positions or perceptible enough have a correspondent.
- ii. Familiar sounds in unfamiliar positions have a correspondent **only if they are perceptible enough**, i.e. if their perceptibility is above a perceptual threshold  $\theta$ .

## b. Phonological learning

The substrate grammar is updated so that the candidate identical to the perceptually filtered input is selected as the output of the grammar.

This model is able to derive the distribution of Haitian liquids, assuming that coda [l] was more perceptible than coda [ʁ] for the first Haitian speakers. I show how it does so in the next two paragraphs.

**Perceptual filter.** Since onset liquids exist both in French and in Gbe, onset liquids are not filtered out by the perceptual filter: hence, *rêver* [ʁeve] ‘to dream’  $\xrightarrow{Perc}$  /ʁeve/, *léger* [leʒe] ‘light’  $\xrightarrow{Perc}$  /leʒe/.<sup>3</sup> However, since coda liquids do not exist in Gbe, only French coda liquids which are perceptible enough have a correspondent in the perceptually filtered input. Assuming that coda rhotics’ perceptibility is smaller than  $\theta$  and coda laterals’ perceptibility is larger than  $\theta$ , coda laterals have a correspondent in the perceptually filtered input, but coda rhotics do not: *sel* [sɛl] ‘salt’  $\xrightarrow{Perc}$  /sɛl/ and *la mer* [lamɛʁ] ‘the sea’  $\xrightarrow{Perc}$  /lamɛl/.

**Phonological learning.** For concreteness, assume that phonological grammars are OT grammars (Prince & Smolensky 1993). \*CODAR and \*CODAL penalize candidates with a coda rhotic and a coda lateral, respectively. MAX(LIQUID) penalizes candidates where a liquid (rhotic or lateral) present in the input has no correspondent in the output. The ranking in (2a) ensures that any liquid present in the input in coda position will not surface in the output (e.g., *sel* /sɛl/  $\xrightarrow{Phon}$  [sɛ], *la mer* /lamɛʁ/  $\xrightarrow{Phon}$  [lamɛ]). This ranking models the distribution of [ʁ] and [l] in Gbe. This is the ranking from which learning starts. The ranking in (2b) ensures that any liquid present in the input will surface in the output whether in onset or coda position (e.g., *sel* /sɛl/  $\xrightarrow{Phon}$  [sɛl], *la mer* /lamɛʁ/  $\xrightarrow{Phon}$  [lamɛʁ]). This ranking models the distribution of [ʁ] and [l] in French.

- (2) a. Gbe: \*CODAR, \*CODAL  $\gg$  MAX(LIQUID)  $\gg$  \*ONSETLIQUID
- b. French: MAX(LIQUID)  $\gg$  \*CODAR, \*CODAL, \*ONSETLIQUID

Assume that phonological learning happens by re-ranking constraints and is error-driven, i.e. the learner alters its current ranking hypothesis only when the input data conflict with it (e.g., Boersma & Hayes 2001). For its output to match the filtered input (with coda laterals and without coda rhotics), a Gbe speaker will need to update his grammar so that MAX(LIQUID) and \*CODAL are flipped in the ranking in (2a). MAX(LIQUID) and \*CODAR need not to be flipped as coda rhotics are not perceived: the Gbe subranking \*CODAR  $\gg$  MAX(LIQUID) is consistent with the input data and therefore is not altered. Flipping MAX(LIQUID) and \*CODAL

<sup>3</sup>I assume that the mapping from [ʁ] to /ʁ/ is a perceptual rather than a phonological mapping but this is not crucial to the analysis.

in the Gbe grammar in (2a) yields the Haitian grammar, shown in (3). This grammar only allows coda laterals to surface.

(3) Haitian: \*CODAR  $\gg$  MAX(LIQUID)  $\gg$  \*CODAL, \*ONSETLIQUID

The model can explain the distribution of the liquids in Haitian, and more generally in any loanwords borrowed from French by Gbe speakers. However, the success of this model depends on an assumption that has not yet been tested yet, i.e. that coda [l] is more perceptible than coda [ʁ]. The only experiment investigating the perceptibility of French [ʁ] I know of is Gendrot (2014), but it is limited to word-final position and it does not provide a comparison with coda [l]. The goal of this paper is to fill this gap.

Following Russell Webb (2010:267), I assume that the Modern French rhotic and lateral are similar enough to their correspondents at the time of creole genesis, in the 17th-18th century. Although the rhotic in 17th century France was probably realized as a uvular trill rather than as a uvular fricative (Zink 1986:29,158), I think that investigating the perceptibility of the Modern French rhotic is still relevant. First, it is not necessary that the sounds were realized exactly as their Modern correspondents for the results of the experiment to be relevant, as long as their perceptual properties were affected similarly by the syllabic context. Second, the fact that coda rhotics are generally elided and coda laterals maintained in French loanwords in Fon, as discussed above, suggests that the conditions that led to the Haitian pattern remained, despite the later change from the trill to the fricative in French.

In order to measure the perceptibility of a consonant in a given context, I measure the perceptual distance between this consonant and its absence in this context. I note  $d'(x-\emptyset, A)$  the perceptual distance between a sound  $x$  and its absence in a context  $A$ . The hypothesis that was tested is summarized in (4).

(4) Hypothesis

In coda positions, the perceptual distance between [l] and  $\emptyset$  is larger than the perceptual distance between [ʁ] and  $\emptyset$ :  $d'(l-\emptyset, \text{coda}) > d'(\text{ʁ}-\emptyset, \text{coda})$ .

Since the elision of coda rhotics applied across the board in Haitian, the hypothesis should hold true across all segmental contexts, except probably in word-final position before a vowel. In this position, [ʁ] should be roughly as perceptible as in onset position (see Fougeron 2007 for an acoustic comparison of [ʁ] in this position and word-initial onset [ʁ]). Also, in languages with coda fricative elision, fricatives sometimes give rise to sandhis in this context (Sole 2010; e.g., the French liaison: *les parents* [lɛpaʁã] ‘the parents’ vs. *les enfants* [lezãfã] ‘the children’). It is plausible that the rhotic was lost in this context not for perceptual reasons but because Haitian speakers generalized the form from pre-pausal and pre-consonantal contexts. Since there are fewer words starting with a vowel than a consonant in French, word-final coda rhotics in pre-vocalic position are likely to have been infrequent enough in the input received by early Haitian learners to motivate the extension of the pattern which emerged in the pre-vocalic and pre-pausal contexts.

In the experiment, only a small set of segmental contexts were considered for practical reasons. The details of the experiment are presented in section 2 and their results in section 3. Section 4 concludes with a discussion.

## 2. Method

A perception experiment was run to test the hypothesis that coda [l] is more perceptible than coda [ʁ]. The stimuli that the participants listened to are presented in section 2.1. The task that they performed is described in section 2.2. The theoretical and statistical model used to infer the perceptual distances from the data collected in the experiment is detailed in section 2.3.

### 2.1. Stimuli

Nonce words varying by the presence/absence of [ʁ] or [l] were constructed. There was a total of 18 nonce words of the form [am{i,a}{ʁ,l,∅}{o#, to#, #}], where ∅ is the empty segment and # marks the end of the word. Two properties of the nonce words were manipulated: the vowel that precedes [ʁ] or [l] and the post-consonantal context. Note that [ʁ] was systematically deleted and [l] maintained in the coda contexts considered in the experiment in Haitian (e.g., *pati* [pati] ‘to leave’ < *partir* [pɑʁtiʁ], *reta* [ʁeta] ‘delay’ < *retard* [ʁətɑʁ], *vityèl* [vitjɛl] ‘virtual’ < *virtuel* [viʁtyɛl], *ri* [ʁi] ‘to laugh’ < *rire* [ʁiʁ], *altitid* [altitid] ‘height’ < *altitude* [altityd], *katedral* [katedyal] < *cathédrale* [katedʁal], *filt* [filt] ‘filter’ < *filtre* [filtʁ], *initil* [initil] ‘useless’ < *inutile* [inytil]).

The preceding vowel was either [i] or [a]. [i] and [a] were chosen because they differ along several dimensions that were shown to be crucial for word-final coda [ʁ] identification in French: F2 and duration (Gendrot 2014). If the perceptibility of [ʁ] varies across vocalic contexts, this is likely to be manifested with [i] and [a].

Two native French speakers (a male and a female) were recorded reading the nonce words in the carrier sentence “Le mot ... commence par un a.” Because the word *commence* starts with a [k] and the consonants [ʁ] and [l] in the word-medial coda condition were followed by [t], the word-final and word-medial conditions are not perfect minimal pairs: they differ both by word position (word-final vs. word-medial) and the following segmental context ([t] vs. [k]). However, I did not expect [k] in the following word to have a strong coarticulatory effect on [l] or [ʁ] (see the Discussion).

Two lists of sentences were created, one with the nonce words varying by the presence or absence of [ʁ] and the other one with the nonce words varying by the presence or absence of [l]. Each list contained twelve sentences, six with the consonant and six without. Each list was read three times by both speakers, each time in pseudo-random order. This yielded a total of 144 items. Recordings for the stimuli were done using a Shure SM58 microphone sampling at 44 kHz in a sound-attenuated booth at MIT.

With the aid of a Praat script (Boersma & Weenink 2014) written by Gabriel Beckers,<sup>4</sup> the root mean square amplitude of the sound files was equalized and scaled to a max peak value of 1. This was done to control for variations in intensity in the stimuli. With the aid of a Praat script written by Daniel McCloy,<sup>5</sup> the sound files were mixed with a noise with a signal-to-noise ratio of -3 dB (noise louder than signal) with the final intensity matched to the stimulus intensity. Two native French speakers checked that the stimuli were still audible. A substantial amount of noise was used in order to maximize the chance to see an effect.

<sup>4</sup><http://www.bio.leidenuniv.nl/~eew/G6/staff/beckers/beckers.html>

<sup>5</sup><https://github.com/drammock/praat-semiauto/blob/master/MixSpeechNoise.praat>

## 2.2. Task

The experiment was based on a forced-choice word identification task run online. It contained two parts: one where participants had to identify whether they heard words with or without [ʁ] and the other one where they had to identify words differing by the presence or absence of [l]. In each part, 72 stimuli were presented in random order. Participants were instructed to listen to the stimuli via headphones at a comfortable intensity level. They were asked to identify the word they heard, for instance *amirto* or *amito*, by checking the corresponding box. Four stimuli served as practice items. The experiment was conducted in a single session and no feedback was given. There was no limit on the response time but participants were asked to respond as quickly as possible.

## 2.3. Participants

Twenty French native speakers participated on a voluntary basis. French speakers were chosen rather than speakers of a Gbe language for practical reasons. The “perceptual filter” hypothesis states that what is relevant is the perceptibility of coda liquids for Gbe speakers rather than for French speakers. However, as long as perception is not entirely determined by the grammar but also by external factors such as the strength of cues in the acoustic signal, it is expected that, if there is any perceptual asymmetry between coda [l] and coda [ʁ], it should be detectable for French speakers. The addition of noise was meant to make the task harder for the French speakers.

## 2.4. Analysis

Confusion matrices were built from the data collected in the experiment. A confusion matrix shows the number of times each of the stimuli (signal or noise) was identified correctly or incorrectly. The confusion matrices were analyzed using Signal Detection Theory (SDT; Macmillan & Creelman 2005). SDT makes it possible to interpret confusion matrices as psychologically meaningful measures of discriminability and bias. Discriminability is a measure of how distinct the signal and the noise are. Bias is a measure of how the decision-making criterion differs from the optimal decision criterion. SDT distinguishes two components in the identification task: first, the stimulus (signal or noise) is mapped by the hearer onto a value on a single internal perceptual variable (information acquisition); second, a response is selected (signal or noise) by comparing this value to a criterion (decision). Information acquisition is assumed to be influenced by external or internal noise: different presentations of a single stimulus yield a distribution of perceptual values for this stimulus. In the most common equal-variance form of SDT, both the noise and signal distributions are assumed to have the same variance ( $sd = 1$ ). The decision is made by establishing a criterion along the perceptual dimension.

Figure 1 illustrates the components of the SDT model used in the analysis. The distributions of the perceptual values for the two stimuli Signal and Noise are represented on the left and right, respectively. The means of the signal distributions are separated by  $d$ , the perceptual distance between the two stimuli. The criterion is represented by the vertical bar with equation  $x = c$ .  $c$  is the location of the criterion relative to the midpoint between the signal distributions

(centered on 0). Positive  $c$  corresponds to a bias against responding “Signal.” All stimuli with perceptual values smaller than the criterion are treated as Noise; all stimuli with perceptual values larger than the criterion are treated as Signal. The proportion of signal stimuli correctly identified as signal stimuli (the area in light gray in Figure 1) is defined as the Hit rate,  $\theta_h$ . The proportion of noise stimuli incorrectly identified as signal stimuli (the area in dark gray in Figure 1) is defined as the False alarm rate,  $\theta_f$ .

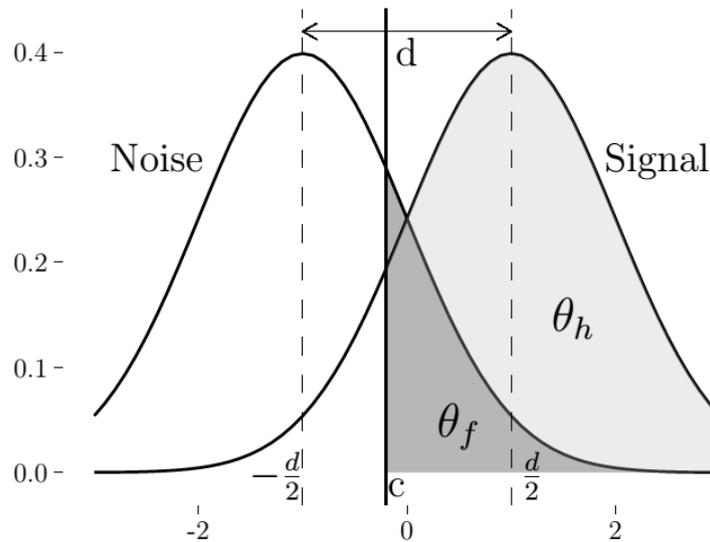


Figure 1: Equal-variance Gaussian Signal Detection Theory framework.

$\theta_h$  and  $\theta_f$  are related to  $d$  and  $c$  via the cumulative distribution function of the standard normal distribution,  $\Phi$ :

$$\begin{cases} \theta_h = \Phi(-c + d/2) \\ \theta_f = \Phi(-c - d/2) \end{cases}$$

By applying the inverse of  $\Phi$ , i.e. the probit function  $z()$ , to both sides of the equations above, the following linear equations are obtained:

$$\begin{cases} z(\theta_h) = -c + d/2 \\ z(\theta_f) = -c - d/2 \end{cases}$$

These equations can be rewritten as a single equation:

$$z(P(\text{response} = \text{Signal}|\text{stimulus})) = -c + d * S$$

with  $S$  standing for a variable with a value of 0.5 when the stimulus is Signal and  $-0.5$  when the stimulus is Noise:

$$\begin{cases} S = 0.5 & \text{if stimulus} = \text{Signal} \\ S = -0.5 & \text{if stimulus} = \text{Noise} \end{cases}$$

The probit of the response probability is a linear function of the stimulus variable  $S$ , where the coefficient of  $S$  equals  $d$  and the intercept equals  $-c$ .

In the experiment, the nonce words with [ʁ] or [l] were treated as the Signal and the words without ʁ or l as the Noise. A probit regression model with binomial error was fit to corrected versions of the confusion matrices using the `glm` function in R (R Core Team 2016), with  $pre-C=\{[i],[a]\}$ ,  $post-C=\{[o],[t],\#\}$ , and  $C=\{[ʁ],[l]\}$  and all their interactions as predictors. Corrected confusion matrices were used instead of the original ones because it was difficult to estimate model parameters when discrimination was extremely accurate. For instance, discrimination was at ceiling in the [i\_o] condition for [ʁ], yielding very large standard deviations for the estimated perceptual distances. Following Brown and White’s (2005) recommendations, we added 0.3 to each cell count in the original confusion matrices.

### 3. Results

The non-corrected confusion matrices are shown in Figure 2. Figure 3 shows the distance parameters  $d$  for each consonant in each context. Figure 4 shows the bias parameters  $c$  for each consonant in each context. Both were estimated by the SDT model fit via probit regression.

	0	ʁ		0	ʁ		0	l		0	l	
	0	118	2	0	118	2	0	120	0	0	76	44
	ʁ	3	117	ʁ	0	120	l	0	120	l	7	113
(a) aʁo/ao				(b) iʁo/io			(c) alo/ao			(d) ilo/io		
	0	ʁ		0	ʁ		0	l		0	l	
	0	112	8	0	99	21	0	102	18	0	66	54
	ʁ	5	115	ʁ	21	99	l	0	120	l	1	119
(e) aʁto/ato				(f) iʁto/ito			(g) alto/ato			(h) ilto/ito		
	0	ʁ		0	ʁ		0	l		0	l	
	0	101	19	0	115	5	0	118	2	0	112	8
	ʁ	31	89	ʁ	36	84	l	0	120	l	2	118
(i) aʁ#/a#				(j) iʁ#/i#			(k) al#/a#			(l) il#/i#		

Figure 2: Confusion matrices. Data pooled across subjects.

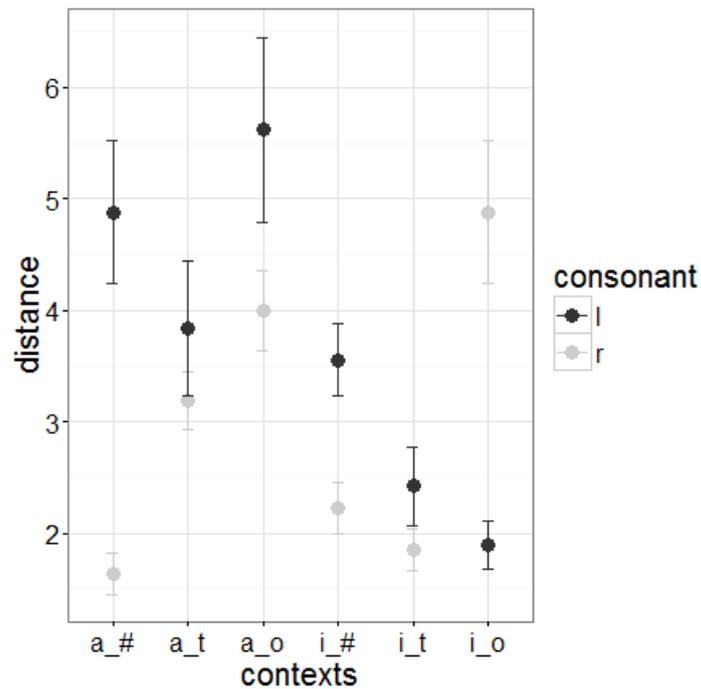


Figure 3: Estimated perceptual distances between nonce words with and without [ʁ] or [l] (in units of standard deviation).

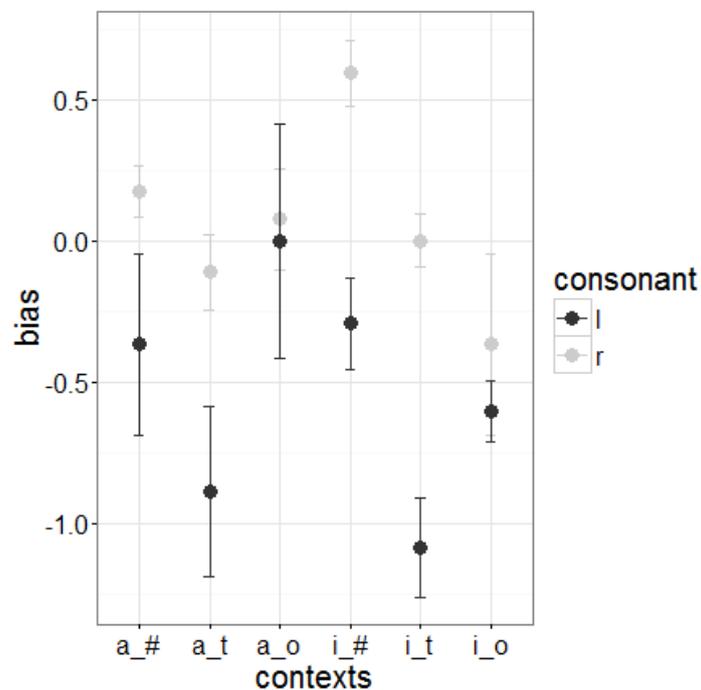


Figure 4: Estimated biases (in units of standard deviation). A positive value corresponds to a bias in favor of the nonce word without [ʁ] or [l]. A negative value corresponds to a bias in favor of the nonce word with [ʁ] or [l].

On average, coda [l] was found to be more perceptible than coda [ʁ], with the average perceptual

distance between nonce words with and without coda [l] being 1.41 ( $\pm .26281$ ) units of standard deviation larger than the perceptual distance between nonce words with and without coda [ʁ] ( $p < .001$ ). However, the difference in perceptibility between coda [l] and coda [ʁ] also depends on the segmental context. Coda [l] was found to be more perceptible than coda [ʁ] only in eight of the sixteen relevant comparisons, as shown in Table 3. In the other contexts, the perceptibility of coda [l] was not found to be significantly different from that of coda [ʁ]. Note however that coda [ʁ] was never found to be significantly more perceptible than coda [l].

	d(ʁ-∅, a_#)	d(ʁ-∅, i_#)	d(ʁ-∅, a_t)	d(ʁ-∅, i_t)
d(l-∅, a_#)	<b>3.24 (.67)</b>	<b>2.65 (.69)</b>	1.69 (.70)	<b>3.03 (.67)</b>
d(l-∅, i_#)	<b>1.92 (.37)</b>	<b>1.33 (.40)</b>	.37 (.42)	<b>1.70 (.37)</b>
d(l-∅, a_t)	<b>2.20 (.63)</b>	1.61 (.65)	.65 (.66)	<b>1.98 (.63)</b>
d(l-∅, i_t)	0.78 (.40)	.19 (.42)	-.77 (.44)	.57 (.40)

Table 3: Differences in perceptibility between [l] and [ʁ] in the four coda contexts (model estimates and standard deviations). Positive values correspond to a greater perceptibility of [l]. Significant estimates ( $p < .05$ ) are bolded. P-values were corrected for multiple comparisons using the Bonferroni correction.

#### 4. Discussion

The results are broadly compatible with the perceptual hypothesis, as (i) coda [l] was found to be more perceptible than coda [ʁ] on average, and (ii) coda [ʁ] was not found to be more perceptible than coda [l] in any context. However, they do not support the specific version of the perceptual hypothesis put forth in the introduction: the segmental context also matters in determining the perceptibility of [ʁ] vs. [l] in coda position. In particular, the perceptibility of coda [ʁ] was found to be improved in medial coda after [a] as compared to other coda contexts, even though coda [ʁ] was lost in this context (e.g., *pati* [pati] ‘to leave’ < *partir* [paʁtiʁ]). Also, the perceptibility of coda [l] was found to be worsened in medial coda after [i] as compared to other contexts, even though coda [l] was maintained in this context (e.g., *filt* [filt] ‘filter’ < *filtre* [filtʁ]). In 4.1, an interpretation of these results is proposed based on previous research on the perceptibility of [ʁ] in French and on a preliminary acoustic study of the recordings used in the experiment. In 4.2, we discuss two ways of fixing the “perceptual filter” hypothesis: resorting to average perceptibility across contexts or to phonological regularization. In 4.3, a frequency-based hypothesis is considered and shown to fail to derive the Haitian pattern.

##### 4.1. Explaining the results

The perceptibility of coda [ʁ] was found to be improved in medial coda after [a] as compared to other coda contexts: the [a\_t] context is the only coda context in which the perceptual distance between [ʁ] and its absence is larger than 3 units of standard deviation (see Figure 3). This improvement might explain the absence of a difference between coda [l] in general and coda [ʁ] in this particular context (see column 3 in Table 3). Since vowel duration and formant transitions

from the preceding vowel are important cues for word-final coda [ʁ] identification (Gendrot 2014), it is not very surprising that the perceptibility of [ʁ] might be affected differently after [i] than after [a]: [i] is higher, fronter, and shorter than [a] (Calliope 1989; Gendrot & Adda-Decker 2005; Rochet & Rochet 1991). I must account however for why [ʁ]-perceptibility is better after [a] than after [i] in word-medial coda, but not in word-final coda.

Let us start with the comparison between word-medial coda [ʁ] after [i] and word-medial coda [ʁ] after [a]. Gendrot (2014) showed that the presence of [ʁ] in the sequences *par le/les/la* [paʁlV] vs. *pas le/les/la* [paV] is signaled by a lowering of [a]'s F2. I assume that [ʁ] identification relies on the same cues in word-medial as in word-final codas and after [i] as after [a]. I hypothesize that [ʁ] is less perceptible after [i] than after [a] in word-medial coda because it does not lower [i]'s F2 as much as [a]'s F2. The higher resistance of [i] to coarticulation could follow from a desire to maintain [i] distinct enough from other neighbouring vowels like [y] and [e]. There is not such a risk with [a], as backing [a] will not compromise any contrast as dramatically: no other vowel is as low (has as high F1) as [a]. In the appendix, I show measurements suggesting that the hypothesis according to which [i] is less coarticulated with [ʁ] than [a] is correct.

I move on to the comparison between word-medial and word-final coda positions. The reason why [ʁ] was found to be less perceptible in word-final than in word-medial coda after [a] might have to do with the nature of the following consonant: [t] in word-medial coda vs. [k] in word-final coda (in the word *commence* [komãs] 'start'). Uvular [ʁ] is expected to be more similar to [k], a velar, than to [t], a dental, and this might have affected its perceptibility in the word-final vs. word-medial coda position. If this hypothesis is correct, it is expected that the perceptibility of word-final [ʁ] should be slightly improved when followed by a non-velar consonant.

The perceptibility of coda [l] was found to be worsened in medial coda after [i] as compared to other coda contexts: the [i\_t] context is the only coda context where the perceptual distance between [l] and its absence is smaller than 3 units of standard deviation (see Figure 3). This worsening might explain the absence of difference between coda [ʁ] in general and coda [l] in this particular context (see the last row in Table 3). The fact that [l] is flanked with two sounds with high F2 targets, [i] and [t], might explain why it is particularly hard to perceive in this context.

#### 4.2. Weakening the “perceptual filter” hypothesis

In general, coda [l] was found to be more perceptible than coda [ʁ]: the distance between words with and without coda [l] is larger than 3 units of standard deviation in 3 out of 4 cases and the distance between words with and without coda [ʁ] is smaller than 3 units of standard deviation in 3 out of 4 cases (see Figure 3). Based on these preliminary results, a possible alternative in the “perceptual filter” paradigm might be entertained, where the average perceptibility of a sound across contexts (here, the coda contexts) plays a role rather than its perceptibility in each context (here, the different coda contexts corresponding to different segmental environments). A sound (here [ʁ]) can be filtered out in all contexts (here all coda contexts) if it is only perceptible enough in a minority of them (here in the [a\_t] context). A sound (here [l]) can have a correspondent in all contexts (here coda contexts) in the perceptually filtered input if it is perceptible enough in enough of these contexts (here in the [i\_#], [a\_#], and [a\_t] contexts). The idea is that a hearer hearing a sound that is on average more perceptible than another sound becomes

more accustomed to the cues signaling this sound and is therefore better equipped to detect them in contexts where they are less salient. More segmental contexts should be considered to test whether this hypothesis is on the right track.

Discrepancies between the perception data in experiments, which tend to be variable, and the patterns of adaptation, which tend to be more regular, have also been observed in loanword phonology (Peperkamp & Vendelin 2008; Kang 2010). Kang (2010) argues that this is because loanwords start as phonetic adaptations of the input language and are regularized over time. A similar explanation could be given to the Haitian data. The first layer of the Haitian vocabulary could have reflected the way French sounds were perceived by Gbe speakers, i.e. with a few coda [ʁ]s and more coda [l]s being faithfully reflected in Haitian surface forms. The preference for a simpler grammar could have later led to a regularization, resulting in the deletion of all coda [ʁ]s and the maintenance of all post-vocalic coda [l]s.

#### 4.3. Problems for a frequency-based approach

Sound frequency has also been argued to play a role in explaining patterns of deletion in language change, with sounds occurring more frequently being more likely to be transmitted across generations (see for example Cohen Priva's (2008) "phone informativity"). I apply my own version of this line of analysis to Haitian, hypothesizing that the frequency of sound patterns in the input to the learner explains the asymmetry between the adaptation of coda [ʁ] and [l]. I show that, even though this analysis is able to predict an asymmetry between the adaptation of coda [ʁ] and coda [l], it wrongly predicts that coda [ʁ] should have been retained rather than coda [l]. I assume throughout that the substrate and superstrate phonologies were the same at the time of Creole genesis as now, at least with respect to the distribution of liquids, and that the frequencies of sound patterns in contemporary French reflect the frequencies of sound patterns in the variety of French that served as input to the first Haitian speakers.

Assume that a Gbe speaker is exposed to words produced by French speakers (e.g., *sel* [sɛl], *la mer* [lamɛʁ]) and modifies its initial grammar gradually so that it produces the same output words as the grammars of French speakers. If learning happens but is incomplete, the resulting grammar will differ both from the substrate and superstrate grammars. For its output to match the French output, a Gbe speaker will need to update his grammar so that the ranking of MAX(LIQUID) and \*CODAR and the ranking of MAX(LIQUID) and \*CODAL are flipped. The Haitian grammar, shown in (5a), corresponds to the Gbe grammar where only the ranking of MAX(LIQUID) and \*CODAL has been flipped and can therefore be conceived as the product of partial learning of French. This grammar maps [sɛl] to [sɛl] and [lamɛʁ] to [lamɛ]. Another potential result of partial learning is the grammar of Haitian', shown in (5b), where only the ranking of MAX(LIQUID) and \*CODAR has been flipped.

- (5) a. Haitian: \*CODAR  $\gg$  MAX(LIQUID)  $\gg$  \*CODAL, \*ONSETLIQUID  
 b. Haitian': \*CODAL  $\gg$  MAX(LIQUID)  $\gg$  \*CODAR, \*ONSETLIQUID

Since words with coda [ʁ] are more frequent than words with coda [l] in French (see Table 4), a learner of French will get more evidence for flipping the ranking of MAX(LIQUID) and \*CODAR than the ranking of MAX(LIQUID) and \*CODAL. Partial learning should result in Haitian' rather than Haitian. A model building on phonological learning and frequency asymmetries alone is unable to capture the Haitian pattern.

		Number	Frequency
l	onset	31,426	95,596
	coda	9,224	55,624
ʁ	onset	66,323	88,800
	coda	30,075	107,444

Table 4: Number of occurrences of onset/coda [l]/[ʁ] in the French lexicon and frequency of words containing at least one onset/coda [l]/[ʁ] (per million of words). Data from *Lexique 3.80* (New et al. 2007).

## 5. Conclusion

In this study, I examined the asymmetric adaptation of French liquids in Haitian Creole (deletion of coda [ʁ] vs. maintenance of coda [l]) focusing on the “perceptual filter” hypothesis, according to which the asymmetry follows from the greater perceptibility of coda [l] for speakers unfamiliar with coda consonants in general. The results do not support the simplest version of this hypothesis, where sounds present in unfamiliar contexts in the input are deleted in contexts where their perceptibility is below a certain threshold and retained in contexts where their perceptibility is above this threshold. This is because coda [l] was not found to be more perceptible than coda [ʁ] in all coda contexts. However, they are compatible with weaker versions of the perceptual hypothesis, where average perceptibility or phonological regularization are also given a role. I also showed that the asymmetry cannot be explained in terms of frequency alone as words with coda [l] occur less frequently than words with coda [ʁ] in French. More generally, the results of this study are in line with models attributing a role both to the target and source phonologies and to perceptual factors in explaining patterns arising from language contact (e.g., creolization, loanword phonology, and second language learning).

## 6. Appendix

Table 5 shows the mean F2 value of [i] and [a] in the nonce words *amito*, *amirto*, *amato*, and *amarto* that were presented to the participants in the experiment testing the perceptibility of [ʁ].

	[i]	[a]
t	2112	1728
ʁt	2054	1376

Table 5: Mean vowel F2 (in Hz) in word-medial position before [t] and [ʁt] (data pooled across the two speakers). Vowel F2 was measured at the vowel midpoint. One data point from the male speaker was discarded because it did not show a clear second formant to measure.

Table 6 shows the mean duration of the sequence spanning from the beginning of the medial vowel ([i] or [a]) to the beginning of [t] in the nonce words *amito*, *amirto*, *amato*, and *amarto* that were presented to the participants in the experiment testing the perceptibility of [ʁ].

	[i]	[a]
Vt	231	232
V <sub>ɛ</sub> t	265	284

Table 6: Mean duration (in ms) of the sequence spanning from the beginning of the vowel to the beginning of [t] in word-medial position (data pooled across the two speakers).

The F2 difference between the vowel allophones before [t] and before [ɛt] is larger for [a] than for [i]. The duration difference between the sequences with [ɛ] and without [ɛ] is larger when the vowel is [a] than [i]. This might explain why [ɛ] was less perceptible after [i] than after [a] in this condition (see Discussion).

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