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Contents

<i>Tommaso Sgrizzi</i> Fare+Che+Infinitives in Turinese Italian: Insights into the low-vP periphery	1
<i>Xue Sun & Polina Berezovskaya</i> Anything goes? – A questionnaire study on scope ambiguities in Ukrainian	23
<i>Gen Kasai</i> ATB movement approach to V-V compound ellipsis in Japanese	45
<i>Jiajia Wang</i> Split or unified: revisit the structure(s) and reading(s) of Mandarin Chinese classifier phrases	60
<i>Takato Yamamoto</i> Only a head-raising derivation for Japanese gap relatives	76
<i>Theodoros Lyriotakis</i> Grandmas' conspiracy?: A sociolinguistic account of the realizations of /t/ by third-generation heritage Modern Greek speakers in Toronto	97
<i>Sid Bhushan</i> Number-driven gender syncretism and Impoverishment: Some insights from Kannada	114
<i>Monica Menegon</i> The left periphery in Bavarian: Analysis of the Emphatic Topicalisation through the lens of the Doubly-Filled-COMP	132
<i>Fabian Zöfelt</i> Was zu beschreiben ist: Towards a taxonomy of German non-canonical passives	155
<i>Sarah Rossi & Tommaso Sgrizzi</i> Current linguistic changes in contemporary Italian: The cases of non io che and essere tipo	180
<i>Aleksandr Sergienko</i> Allomorphy of sentential negation in Ishkashimi	201
<i>Irene Macazaga</i> Multiple wh-fronting feeds multiple sluicing: The case of Basque	225
<i>Taika Nagano & Kanta Tateno</i> Morpho-semantic notes on unhappier	248

<i>Maria Berkovich</i>	258
Polarity-sensitive exceptives: The case of Chechen	
<i>Nelly Marutyan</i>	275
Functional heads as binders: The case of Eastern Armenian	

Fare+Che+Infinitives in Turinese Italian

Insights into the low-vP periphery

Tommaso Sgrizzi

This paper addresses the syntax of an understudied construction in Turinese Italian, the Fare+Che+Infinitive (FCI), which features a causative verb *fare* ('make'), the complementizer *che* ('that'), and an infinitival verb. The construction presents a challenge to standard assumptions about clause structure, finiteness, and complement selection. Through a formal syntactic analysis and cartographic heuristics, this study aims to uncover the underlying structure of the FCI, proposing a solution for the unusual selection of infinitival verbs by the high complementizer *che* rooted in Belletti's (2004) low-vP proposal while also providing a formal analysis for the pragmatic constraints of the FCI.

1. Introduction

This paper investigates an understudied syntactic construction in Turinese Italian, a regional variety spoken in and around the city of Turin. The construction, which I will refer to as *Fare+Che+Infinitive* (FCI), presents a puzzling combination of elements: a causative verb *fare* 'make', followed by the finite complementizer *che* 'that', which in turn selects an infinitival verb. An example can be observed below.

- (1) Stamattina ero al supermercato, così ho fatto
this-morning be.1SG.PST at-the supermarket, so have.1SG.PRES make.PTCP.1SG
che comprare i pomodori.
that buy.INF the tomatoes
'Since I was at the supermarket, I bought the tomatoes.'

The context in which (1) is typically uttered involves the preamble event (*being at the supermarket*) occurring somewhat unexpectedly. This unforeseen circumstance creates an opportunity to

carry out an action that would otherwise have been delayed (*buying the tomatoes*). This configuration seems to challenge expectations about clause structure and verb complementation in Italian, and potentially opens up new questions about the syntax of causatives, finiteness, and complement selection.¹ Through a formal syntactic analysis rooted within cartographic heuristics, this study aims to shed light on the underlying structure of the FCI construction and explore its implications for theories of clausal architecture at the syntax/semantics interface. This paper is structured as follows: in Section 2, we discuss several possible analyses of the embedded infinitive and argue that the infinitival verb constitutes a verbal complement; in Section 3, we explore the structural size of the non-finite domain using cartographic heuristics (Belletti 2004; Rizzi & Bocci 2017) and movement diagnostics, providing an account of how the finite complementizer *che* selects an infinitival verb; in Section 4 we address the pragmatic restrictions of the FCI from a syntactic perspective; and in Section 5 we evaluate our proposal against cartographic heuristics again. Finally, we conclude the paper in Section 6 with some considerations on further research.

2. The nature of the non-finite domain of the FCI

An immediate quirky property of FCIs is the apparent selection of an infinitival verb by the (usual finite) complementizer *che*, ‘that’. This brings about the question of how selection is performed, and what is the nature of both the matrix and embedded clause of FCIs. More specifically, in this section we will evaluate the following three possibilities:

- (H1) *che*+infinitive is a (reduced) CP;
- (H2) The infinitival verb is a NP/DP, and *che* selects a nominal complement;
- (H3) The FCI consists of a monoclausal configuration.

Each of these hypotheses makes distinct predictions regarding the syntactic and semantic behavior of the FCI. For instance, if (H1) is correct, we expect to find evidence of CP-like properties in the embedded infinitival clause, such as the impossibility of some types of movements. If (H2) holds, the complement of FCIs should pattern with other nominal complements in terms of distribution. Finally, if (H3) is on the right track, we should observe restructuring-like phenomena, with the infinitival verb being directly integrated into the matrix clause. In what follows, we examine empirical data bearing on these possibilities and assess which analysis offers the most explanatory adequacy.

¹ Piedmontese has the same construction, with the same intended meaning:

- (i) Fa che caté due tumatiche.
do.2SG.IMP that buy.INF two tomatoes
'Buy the tomatoes.'

2.1. *Che+Infinitive is not a (reduced) CP*

In this section, we are going to test whether the sequence *che*+infinitive can be considered a (reduced) CP. The central issue here concerns the syntactic status of this construction and whether it can be assimilated to other instances of CP complementation. It is important to highlight once again that this construction appears to be tightly linked to the verb *fare*, and crucially, no other verb in this variety of Italian seems to allow the selection of a *che*+infinitive complement. This restriction is particularly striking given that many other verbs in Italian commonly take CP complements headed by *che*. If *che*+infinitive truly instantiated a CP, we would expect to find a broader range of selecting verbs (especially those that are otherwise compatible with finite *che*-clauses) allowing this configuration (cf. 2b). The absence of such a generalization presents a challenge for analyzing these constructions as involving a *bona fide* CP.

- (2) a. Ieri avevo particolarmente fame così ho fatto
 yesterday have.1SG.PST especially hungry so have.1SG.PRES do.PTCP
 che mangiare la torta che hai preparato
 that eat.INF the cake that have.2SG.PRES make.PTCP
 ‘Yesterday, since I was especially hungry, I ate the cake you made.’
- b. *Ieri avevo particolarmente fame così ho deciso
 yesterday have.1SG.PST especially hungry so have.1SG.PRES decide.PTCP
 che mangiare la torta che hai preparato
 that eat.INF the cake that have.2SG.PRES make.PTCP
 ‘Yesterday, since I was especially hungry, I decided to eat the cake you made.’

In addition to selection, another important diagnostic for determining whether *che*+infinitive bears a CP status involves its syntactic distribution, particularly its behavior in environments where canonical CPs are expected to be licit. If *che*+infinitive were a genuine CP, or even a reduced variant thereof, we would predict it to pattern with standard *che*-headed CPs in contexts that are sensitive to clausal status. Two such contexts are focalization and question-answer congruence. First, CPs can typically be focalized, appearing in left-peripheral Focus positions, often in contrastive or corrective focus constructions (3b). If *che*+infinitive is truly a CP, it should be able to undergo such fronting and appear in a focalized position, just like finite *che*-clauses. This expectation is tested in (3a).

- (3) a. *[che mangiare]_{FocP} ho fatto (non che dormire)
 [that eat.INF]_{FocP} have.1SG.PRES do.PTCP (not that sleep.INF)
 ‘EATING, I did - not sleeping.’
- b. [che avrei mangiato]_{FocP} ho deciso (non che
 [that have.1SG.SUBJ eat.PTCP]_{FocP} have.1SG.PRES decide.M.PTCP (not that
 avrei dormito)
 have.1SG.SUBJ sleep.M.PTCP)
 ‘THAT I WOULD HAVE EATEN, I decided - not that I would have slept.’

Second, CPs can be felicitously used as answers to CP-oriented questions (4). If *che*+infinitive has CP status, it should be able to occur naturally in the same kind of answer slot. This is illustrated in (5).

(4) Q: Cosa hai deciso?
 what have.2SG.PRES decide.PTCP
 ‘What have you decided?’

A: Che andrò a Parigi.
 that go.1SG.FUT to Paris
 ‘That I’ll go to Paris.’

(5) Q: Cosa hai fatto?
 what have.2SG.PRES done.PTCP
 ‘What have you done?’

A: *Che mangiare.
 that eat.INF
 ‘Eating.’

These tests allow us to rule out the hypothesis that *che*+infinitive constitutes a genuine CP, given that its distribution diverges significantly from that of standard CP constructions. In the following section, we turn to an alternative analysis—one that treats the infinitive not as a clausal complement, but as a nominal element, along the lines of the hypothesis put forward by Raposo (1989) for Romance infinitives.

2.2. The infinitive of the FCI is not a DP/NP

In his seminal work, Raposo (1989) showed that Romance infinitives often exhibit nominal properties (cf. Kayne 2000). This observation opens the door to the hypothesis that the infinitive in certain constructions is not clausal but rather nominal in nature. In support of this view, consider the following data:

- (6) a. Hai visto che (belle) macchine?
 have.1SG.PRES see.PTCP that (beautiful) cars
 ‘Have you seen how beautiful those cars are?’
- b. Che paura quel film!
 that fear that movie
 ‘What a scary movie!’
- c. Che ridere/risate che è stato quello spettacolo!
 that laugh.INF/laughter that be.3SG.PRS be.PTCP that show
 ‘What a funny show has it been!’

In these examples, *che* plausibly functions as a DP-internal exclamative operator, rather than as a left-peripheral complementizer. This interpretation is strengthened by the fact that *che* can

occur twice under coordination, which would be unexpected if it were a single clausal left-peripheral element:

- (7) a. Hai visto che macchine e che moto (che ho
have.1SG.PRES see.PTCP that cars and that motorbikes (that have.1SG.PRES
comprato)?
buy.PTCP)
'Have you seen what beautiful cars and motorbikes have I bought?'
- b. Che paura e che meraviglia quel film!
that fear and that wonder that movie
'What a scary and wonderful movie!'
- c. Che ridere e che bellezza che è stato quello spettacolo!
that laugh.INF and that beauty that be.3SG.PRES be.PTCP that show
'What a funny and beautiful show has it been!'

These examples clearly show that *che* is independently associated with each coordinated noun phrase, and thus strongly suggest a nominal, not clausal, structure. In particular, examples like (6c) and (7c) provide compelling evidence that infinitives such as *ridere* 'to laugh' are functioning as nominal expressions within an exclamative DP. The use of *ridere* alongside overt nouns like *risate* 'laughter' or *bellezza* 'beauty' also points to the interpretive similarity between the bare infinitive and its nominal counterpart, further supporting the nominal analysis. Moreover, this nominal use of infinitives is not productive across the board, but it is limited to specific lexical items and constructions. The following examples illustrate that not all infinitives are acceptable in this context:

- (8) a. *Che correre che è stato questo weekend!
That run.INF that be.3SG.PRES be.PTCP this weekend
'What a running has this weekend been!'
- b. *Che vincere che sono state le Olimpiadi!
That win.INF that be.PTCP the Olympics
'What a winning Olympics has it been!'
- c. *Che cominciare che ha sfoggiato Kasparov nella sua ultima
That begin.INF that have.3SG.PRES show-off.PTCP Kasparov in-the his last
partita!
match
'What a beginning that Kasparov showed off in his last match!'

The marked unacceptability of these forms suggests that nominalized infinitives of this kind are subject to lexical restrictions that do not apply to the FCI. Taken together, the data provide strong evidence that in constructions like (6c) and (7c), the infinitive does not behave as a verb element, but rather as a nominal element embedded inside a DP structure. This has serious implications for the analysis of the *che*+infinitive construction here under investigation, as it raises the possibility that what might superficially appear to be a clausal complement could, in

some cases, actually be a nominal or pseudo-nominal expression. However, in contrast to the exclamative uses just discussed, *che* in the FCI behaves quite differently. Crucially, it cannot be coordinated in these constructions, unlike in clearly nominal exclamatives. This is evident in the following example:

- (9) Questa sera faccio che correre e (*che) allenarmi.
 this evening do1SG.PRES that run.INF and (that) train.INF.REF
 ‘This evening I’ll go run and train myself.’

The unacceptability of the second *che* under coordination suggests that, in the FCI, it does not occur within each conjunct, as we would expect if it were a DP-internal exclamative element (cf. 7). Moreover, FCIs are broadly compatible with a wide range of verbs (with the notable exception of stative predicates, which we discuss below). Additional evidence comes from selectional restrictions: *che* in FCIs cannot introduce canonical DPs or NPs. Consider the contrast in (10):

- (10) Faccio che mangiare/*pranzo.
 do.1SG.PRES that eat.INF/*lunch
 ‘I do eat /*lunch.’

Here, while *mangiare* ‘to eat’ is acceptable in the FCI, the nominal *pranzo* ‘lunch’ is not. This ungrammaticality suggests again that *che* in FCIs does not take DP or NP complements, again differentiating it from the nominal-introducer *che*.

Taken together, these observations lead to a second conclusion: the infinitive in FCIs cannot be straightforwardly analyzed as a DP or NP. Nor can *che* be treated as a DP-internal operator, as in exclamatives. Rather, *che* in FCIs appears to function as a functional element external to the infinitival verb, possibly contributing aspectual, modal, or discourse-related meaning to the construction as a whole. This evidence invites an analysis of FCIs that situates *che* in the functional spine of the clause.

2.3. The event structure of the FCI

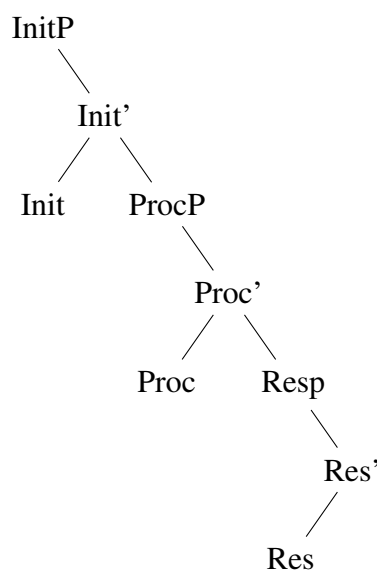
Having set aside hypotheses (H1) and (H2) based on the evidence discussed in the preceding sections, we are now left to explore hypothesis (H3), which treats the *che*+infinitive sequence in FCIs not as a full CP nor as a nominal projection, but rather as a VP. In what follows, we investigate the properties of this construction under such an analysis, focusing particularly on its syntactic behavior, lexical restrictions, and interaction with aspectual and modal operators. One of the most salient and theoretically revealing properties of FCIs is their incompatibility with stative predicates (11a) and modal verbs (11b), a pattern that emerges consistently across a range of examples.

- (11) a. *Stamattina ho fatto che temere il traffico / pesare 70kg /
 this morning do1SG.PRES that fear.INF the traffic / weight.INF 70kg /
 essere felice.
 be.INF happy
 ‘This morning I feared the traffic / weighted 70kg / was happy.’

- b. *stamattina ho fatto che voler prendere il pullman / sapere
 This morning do1SG.PRES that want.INF take.INF the bus / know.INF
 cosa fare / poter svegliarmi tardi.
 what do.INF / can.INF wake.INF=CL.REFL late
 ‘This morning I wanted to take the bus / to know what to do / to be able to wake up late.’

The restriction against stative verbs must be traced to the interaction between *fare* and the embedded verbal predicate. We in fact propose that this incompatibility stems from the semantic and syntactic properties of *fare* within the FCI. Drawing on standard analyses on causatives (Belletti 2017; Ramchand 2008, a.o.), we assume that *fare* in this construction instantiates a causative light verb introducing an initiator or agent in its specifier. More concretely, one possibility is to adopt a Ramchandian VP-shell structure, where the verb phrase is decomposed into a series of functional projections, including an initiation layer (InitP), a process layer (ProcP), and a result layer (ResP).

(12)



Crucially, under Ramchand’s system, stative verbs lack a ProcP projection—the structural layer associated with dynamic event development. If *fare* selects for a ProcP (i.e., an eventuality that involves change or process), then stative predicates, which are inherently non-dynamic and lack this projection, will be categorically excluded from the FCI environment. This syntactic incompatibility is thus not arbitrary, but follows from a principled mismatch between the selectional properties of the causative selecting verb and the aspectual profile of stative verbs. In short, *fare* in FCIs requires a dynamic predicate it can causativize—something stative predicates cannot provide. This analysis aligns with Belletti’s (2017) account of causative constructions in Italian, where similar restrictions on embedded modals (13a) and statives (13b) are observed.

- (13) a. *Mario ha fatto volere la torta ai bambini.
 Mario have.3SG.PRES doPTCP want.INF the cake to-the children
 ‘Mario made the children want the cake’
- b. ??Mario ha fatto temere i temporali ai bambini.
 Mario have.3SG.PRES doPTCP fear.INF the thunderstorms to-the children
 ‘Mario made the children fear the thunderstorms.’

In (13b), the only marginally acceptable interpretation involves an inferred dynamic cause (an event that frightened the children) rather than a direct embedding of the stative predicate *temere* ‘fear’. That is, the causative *fare* must be understood as initiating a change in the mental state of the children, not simply introducing a static psychological attitude. This interpretive constraint mirrors the FCI data in (11), reinforcing the conclusion that FCIs, like standard causatives, disallow stative predicates unless a dynamic event can be pragmatically accommodated. Further syntactic support for this view comes from considering the structural height of the embedded predicate. Building on Cinque’s (1998; 2006) hierarchy of functional projections, we observe that certain high projections, such as $\text{Mod}_{\text{Volition}}\text{P}$ (volitional modality), are too high to be embedded under *fare*. For instance, the ungrammaticality of (13a) can be derived from the fact that *fare* occupies a lower position in the clause than $\text{Mod}_{\text{Volition}}\text{P}$, making the embedding structurally illicit. This same logic applies to the modal constructions in (11b), where *volere* ‘want’, *sapere* ‘know’, and *potere* ‘can’ are too high in the inflectional spine to be embedded under *fare* ‘make.’

The structural configuration of FCIs can be further explored by examining what cannot intervene between *fare* and the infinitival verb. As the following example shows, FCIs categorically disallow any auxiliary or inflectional material—tense, aspect, or modality—between *che* and the infinitive:

- (14) *Stamattina ho fatto che aver mangiato un croissant visto
 this-morning have.1SG.PRES do.PTCP that have.INF eat.PTCP a croissant since
 che avevo finito la dieta.
 that have.1SG.PST finish.PTCP the diet
 ‘This morning I have eaten a croissant since I finished the diet’

The ungrammaticality of (14) suggests that no TP, AspP, or ModP can appear between *che* and the infinitival verb. This absence of intervening functional structure further supports the idea that the *che*, if it is a functional head, must be a low, vP-internal element.

At the same time, the structure above the causative verb appears to be fully articulated. FCIs are compatible with various finite tenses, as shown below:

- (15) Faccio / Farò / Ho fatto che mangiare un
 Make.1SG.PRES / Make.1SG.FUT / have.1SG.PRES do.PTCP that eat.INF a
 croissant visto che ho finito la dieta.
 croissant since that have.1SG.PAST finish.PTCP the diet
 ‘I eat / I will eat / I have eaten a croissant since I finished the diet.’

This indicates that the matrix verb *fare* can be fully inflected for tense, and that the infinitive embeds within a clause that has a complete TP projection. Similarly, at a first scrutiny *fare* can be embedded under certain modals, as long as they do not occupy structurally too high a position:

- (16) Puoi fare che comprare il pane visto che vai al
 Can.2SG.PRES do.INF that buy.INF the bread since that go.2SG.PRES to-the
 supermercato?
 supermarket
 ‘Can you buy the bread since you go to the supermarket?’

However, FCIs cannot be embedded under all modals or aspectual verbs. Consider the following:

- (17) a. ??Voglio fare che scrivere a Gianni perché non lo sento da
 want.1SG.PRES do.INF that write.INF to Gianni because not it.CL hear from
 un po’.
 a while
 ‘I want to write to Gianni because I don’t hear from him for a while.’
 b. *So fare che riparare il tavolo.
 know.1SG.PRES do.INF that repair.INF the table
 ‘I know to do repair the table.’

The status of (17a) is degraded, while (17b) is outright ungrammatical. The precise reasons for these judgments remain somewhat elusive and may depend on subtle speaker-related interpretations.² Nonetheless, the broader pattern seems to be clear: while FCIs allow tense and certain low modals in their matrix domain, these are blocked below *che*. This distribution provides further confirmation that FCIs involve a structure in which the *che*+infinitive constituent remains low in the clausal spine.

² Possibly due to semantic constraints related to the event structure of the FCI, which is also incompatible with aspectual verbs (i) and progressive aspect (ii):

- (i) *Continua a / Finisci di / Comincia a fare che mettere in ordine la
 continue.2SG.IMP to / Finish.2SG.IMP to / Begin.2SG.IMP to do.INF that put.INF in order the
 stanza.
 room
 ‘Continue/Finish/Start doing to order the room.’
 (ii) *Facevo che mettere in ordine la stanza quando mi ha chiamato Gianni.
 do.1SG.PST that put.INF in order the room when me.CL.ACC have.3SG.PRES call.PTCP Gianni
 ‘I was doing to order the room when Gianni called me.’

Since the causative or initiating head modified by the aspectual verbs in (i) likely denotes a unique onset of the causing event, it is presumably impossible to identify a beginning, an endpoint, or a temporal extension for it.

To summarize, these facts argue for a view of FCIs in which *fare* heads a causative projection introducing a dynamic eventuality, and *che*+infinitive forms a tightly bound VP-internal constituent lacking inflectional structure. This framework accounts for the exclusion of stative and modal verbs within FCIs, the restriction against auxiliaries between *che* and the infinitive, and the distributional constraints on what may embed or be embedded within the construction. Having clarified the syntactic and event-structural nature of the infinitival constituent, we now turn to a central open question: what exactly is the status and function of *che* in this configuration? If the infinitive is indeed a bare VP or vP, and not a nominal or clausal complement, then *che* must be reanalyzed as a functional element operating at the left edge of this non-finite domain, whose nature will be investigated in the next section.

3. On the nature of ‘*che*’ and the low vP periphery

Let us now take stock of the empirical picture that has emerged from our investigation so far. We reached the following generalizations: (i) the structure above *fare* in the matrix clause is fully articulated, highlighting the presence of a TP layer; (ii) the infinitival constituent embedded under *fare* is structurally a VP, not a CP or TP; (iii) no TP-related material (tense, aspect, modality) can intervene between *che* and the infinitive. These findings raise a central theoretical question: what exactly is the syntactic status of *che* in FCIs, and from where does it originate in the clause structure?

On the one hand, *che* is traditionally analyzed as a complementizer that expresses clause type and illocutionary force, particularly in finite declarative clauses (Rizzi 1997). Under this view, *che* surfaces in the highest position of the CP field (ForceP) encoding the clause’s illocutionary properties and interfacing with the matrix verb’s selectional requirements. This high position correlates with the interpretive force of embedded clauses and accounts for *che*’s obligatory presence in finite declaratives selected by embedding predicates like *dire* ‘say’, *credere* ‘believe’, and *pensare* ‘think’. On the other hand, Rizzi & Bocci (2017) note that Force is closely intertwined with Fin, the lowest projection in the split CP structure, which expresses finiteness features and governs the agreement between the clausal complement and its internal predicate (mediating logophoric control, cf. Bianchi 2003; Landau 2015, 2024). In other words, *che* is implicated in both ends of the CP domain: it contributes to illocutionary force (ForceP) and, in some cases, also reflects properties related to finiteness (FinP). To account for this dual behavior, Belletti (2010) proposes a movement-based analysis in which *che* is externally merged in FinP and subsequently raises to ForceP. This movement allows *che* to carry features associated with both projections, explaining why a single lexical item may reflect both the clausal type and finiteness properties of the embedded clause.

However, when we turn to the *che* of FCIs, this analysis runs into significant problems. First, the infinitival constituent in FCIs lacks the distributional and structural profile of CPs. It cannot appear in embedded finite contexts, cannot host discourse-related material, and, crucially, does not allow the presence of overt inflectional material, modals, or auxiliaries. Second, the crosslinguistic study conducted by Satik (2022), based on 17 languages, provides compelling evidence that infinitival clauses categorically lack Force projections. That is, no infinitive, across the languages surveyed, projects a full CP structure with ForceP. If this generalization is correct, it rules out any analysis in which *che* in FCIs originates in FinP and moves to ForceP, because ForceP simply is not present in non-finite domains.

This presents a theoretical impasse if we continue to assume that *che* must be located within the high CP field. A promising resolution comes from shifting our perspective away from the traditional CP domain and considering the structural landscape immediately above the VP. Belletti (2004; 2001; 2010) has shown, based on a range of empirical data from Italian, that the low periphery—i.e., the functional field above vP but below TP—mirrors the CP field in having specialized positions for Topic and Focus. This ‘low left periphery’ hosts discourse-sensitive elements in the post-verbal domain and plays a crucial role in the syntax–discourse interface, particularly in Italian. Following these insights, we propose that *che* in FCIs is best analyzed as a functional element merged in this low-vP periphery. Rather than functioning as a Force head or traditional complementizer, *che* may instantiate a low functional head that introduces the infinitival predicate in a way that satisfies the syntactic and semantic requirements initiated by the causative verb *fare*. Its inability to co-occur with finiteness, auxiliaries, or modal heads aligns naturally with its position in a structurally low domain, below TP and significantly outside the scope of the CP system.

In the sections that follow, we will examine in more detail the structural position of *che* with respect to other functional elements in the low periphery. In particular, we will explore its interaction with discourse-related material such as low topics and focus constituents, and investigate whether *che* can be unified with other low functional heads found in Italian infinitival constructions. Through this, we aim to refine the hypothesis that FCIs instantiate a distinct syntactic architecture in which *che* plays a specialized role—one that is not reducible to standard complementizer functions, but is instead rooted in the selectional requirements of causation.

3.1. *Che > Low Focus and Topic*

One important piece of evidence for the structural position of *che* in FCIs comes from its interaction with other elements known to occupy the low periphery of the clause, namely focus and topic constituents. The empirical data strongly suggest that *che* precedes both low focus and low topic elements, pointing to a structurally high position within the low left periphery. Let us begin with low focus. FCIs readily allow a focused constituent to appear immediately after the infinitive introduced by *che*.

- (18) Visto *che* io ero impegnato, ha fatto *che* rispondere
 since that I.NOM be.1SG.PST busy.PTCP, have.3SG.PRES do.PTCP that answer.INF
 [Mario]_{Focus}.
 Mario
 ‘Since I was busy, Mario answered.’

Here, the focus-marked constituent *Mario* follows *che* and the infinitive, suggesting that *che* occupies a position higher than low FocusP.

Turning to low topics, we observe that topicalized constituents can also appear in FCIs, and again, they follow *che*:

- (19) So che eri impegnato, così ho fatto che
 know.1SG.PRES that be.2SG.PST busy.PTCP, so have.1SG.PRES do.PTCP that
 stirarle [io]_{Focus} [le tue camicie]_{Topic}.
 iron.INF=CL.3SG.PL I.NOM the your shirts
 ‘I know you were busy, so I ironed your shirts myself.’

The DP *le tue camicie* ‘your shirts’ is clearly topicalized—it appears after the infinitival verb introduced by *che* and it is resumed by a clitic adjoined to the infinitive. This confirms that low TopicP is also active in the structure of FCIs, and crucially, it appears lower than the position of *che*.

All in all, these observations allow us to sketch a preliminary structural representation of the relevant portion of the clause. Based on the relative linear and hierarchical ordering of *che*, FocusP, and TopicP, we propose that *che* lexicalizes a dedicated low-Force head—positioned above the low focus and topic projections, but below TP. This positioning offers a natural explanation for several otherwise puzzling facts. This accounts for *che*’s incompatibility with elements of the high inflectional field (such as modals and auxiliaries), while also explaining the linear order with respect to discourse-sensitive material at the vP edge. Before refining our structural hypothesis and explore its implications for the typology of infinitival complementation and the syntax of causation, in the next section we test our analysis of *che* against standard transparency effects.

3.2. Transparency effects across ‘*che*’

In this section, we examine whether the presence of *che* acts as a barrier to transparency effects—namely, clitic climbing, object fronting (topicalization), and anaphor binding. These diagnostics are traditionally used to test the degree of syntactic transparency between matrix and embedded domains. If *che* is really seated at the edge of the vP, we do not expect it resist a series of movement and binding diagnostics. Starting with clitic left dislocation (CLLD), consider the following example:

- (20) [La tua torta]₁ ho fatto che mangiarla₁ stamattina perché
 [the your cake] have.1SG.PRES do.PTCP that eat.INF=CL this-morning because
 non avevo altro con cui fare colazione.
 not have.PST else with which do.INF breakfast
 ‘Your cake, I ended up eating it this morning because I had nothing else for breakfast.’

In (20), the topicalized object *la tua torta* is resumed by the clitic *la* within the embedded infinitival clause. The acceptability of this sentence shows that left-dislocated constituents can bind clitics across *che*, suggesting that no opaque syntactic domain intervenes between the matrix and embedded clauses. Clitic climbing of the infinitival object onto the matrix verb is also fully grammatical:

- (21) Ti ricordi che ti avevo parlato
 2SG.ACC remember.2SG.PRES that you.2SG.DAT.CL have.1SG.IMPV speak.PTCP
 dei biglietti di quel concerto? Ecco, li₁ ho fatti che
 of-the tickets of that concert Well, 3PL.ACC have.1SG.PRES do.PTCP that
 prendere *t*₁ perché stavano per finire.
 take.INF because be.3PL.IMPV about finish.INF
 'Remember I told you about those concert tickets? Well, I just got them because they
 were almost sold out'

What (21) shows is the accusative object clitic *li* climbing from the embedded infinitival predicate (*prendere* 'take') to the matrix causative verb. This movement across *che* is expected only if the embedded clause remains syntactically transparent. Moreover, *che* does not restrict the binding domain of reflexive anaphors (22), and Condition C effects arise if we try to co-index a matrix subject with an infinitival argument (23):

- (22) Al suo evento non si è presentato nessuno, così Gianni
 at his event not si.REF.CL be.3SG.PRES show-up.PTCP nobody, so Gianni
 ha fatto che iscrivere sé stesso.
 have.3SG.PRES do.PTCP that enroll.INF himself
 'No one showed up to his event, so Gianni ended up signing himself up.'

- (23) *Date le circostanze, Mario₁ ha fatto che ferirlo₁.
 given the circumstances, Mario have.3SG.PRES do.PTCP that hurt.INF=3SG.CL
 'Given the circumstances, Mario ended up hurting him'

In (22), the anaphor *sé stesso* is bound by the matrix subject *Gianni* across *che*. This indicates that the embedded domain remains accessible to the matrix clause for binding purposes, again undermining any claim that *che* acts as a binding barrier. In (23), coreference between the matrix subject and the embedded object pronoun results in ungrammaticality, as expected if the pronoun lies within the c-command domain of its antecedent. The fact that Condition C effects are still active across *che* further supports the conclusion that no independent CP boundary intervenes, and that the matrix and infinitival verbs lie in the same domain. While we showed in Section 2.1 that *che* does not appear to project a full CP, in this section we advanced further evidence for the hypothesis that, as a vP-internal functional head, it does not prevent transparency effects.³ Moreover, we reached the following structural hypothesis based on the cartographic diagnostics applied above.

- (24) [_{CauseP} *fare* ... [_{che} [_{LowFocus} Foc [_{LowTopic} Top [_{InitP} ... [_{ProcP} ... [_{ResP} ...]]]]]]]⁴

³ And this is also shown by the temporal dependencies of the infinitival event with respect to the tense values checked by *fare*. The time of the VP eventuality always coincides with the time of the causing event, which, according to recent literature on the theory of clausal complementation, indicates a high degree of integration of the embedded clause within the matrix domain (Wurmbrand & Lohninger 2023; Lohninger & Wurmbrand 2020).

⁴ To anticipate what will be discussed in the conclusions, Under this analysis (and given the monoclausal diagnostics presented throughout the paper) it is not immediately clear what the nature of the subject inside the infinitival VP is. One possibility is that the subject is the standard infinitival subject PRO (Landau 2024), necessarily

The precise contribution of *che* to the interpretation and derivation of FCIs remains to be clarified. We turn to this issue in the following section.

3.3. The low-vP periphery

Our characterization of our low-*che* builds on Belletti's (2004) influential parallelism between the periphery of CP and that of vP. Just as the left periphery of CP includes articulated positions such as Force, Topic, and Focus, the low vP-periphery also hosts comparable functional projections that contribute to the clause's information-structural and interpretive architecture. In particular, Belletti's work shows that while a clause may contain two syntactic Focus positions, one high (left-peripheral) and one low (within the IP/vP domain), these positions differ systematically in the interpretive type of focus they encode. This is illustrated by the contrast below:

- (25) a. [GIANNI]_{Contrastive Focus} ho visto
 Gianni have.1SG.PRES see.PTCP
 'GIANNI, I have seen (not someone else).'
- b. Ha telefonato [Gianni]_{New Information Focus}.
 have.3SG.PRES call.PTCP Gianni
 'Gianni called.'

In (25a), the left-peripheral Focus position hosts contrastive or corrective focus, while in (25b), the low vP Focus position hosts informational or new focus. The syntax maps transparently to these interpretive differences. Extending this logic, we propose that if there exists a low Force projection, mirroring the CP-level ForceP, it too would bear a distinct interpretive function, different from its high counterpart. Just as Focus splits into contrastive vs. new-information types across the clause, so too might Force split according to the type of event or clausal content being encoded. We begin by observing that the standard high-*che* obligatorily appears with finite (embedded) clauses. This requirement suggests that high-*che* is tied to finiteness features, as, by sitting above Tense within the CP layer, is able to mediate the tense relationship between the matrix and the complement domain. Crucially, low-*che* appears in a context where finiteness is absent (i.e., with infinitival clauses), and thus its role cannot be associated with finiteness specifications. A more defining property of high-*che* is its association with clausal type, Force in Rizzi's (1997) sense. High-*che* introduces propositional complements, embedded questions, and relative clauses, and plays a central role in encoding the relation between the matrix verb and the speech act or illocutionary force of the embedded clause (Cheng 1997).

We suggest that low-*che* plays a parallel but distinct role. In the context of the FCI, we argue that low-*che* encodes Eventuality Type, rather than Clause Type (Cheng 1997). This follows from three key empirical observations about the FCI: (i) The Agent or Initiator introduced in Spec,CauseP is responsible for bringing about the infinitival eventuality; (ii) The *che*+infinitive construction is restricted to *fare*; other verbs do not allow it; (iii) Stative verbs are incompatible with the FCI; only dynamic or eventive predicates are permitted. These facts converge on the

co-indexed with the agent of *fare*. Another possibility is to adopt the view that the subject of *fare* is the raised subject of the infinitival event, much as in restructuring constructions with modal and aspectual verbs (Cinque 2006), which are likewise monoclausal. We leave the precise characterization of the subject's nature to future research.

idea that low-*che* mediates the requirement for dynamicity expressed by the selecting causative verb *fare*. In Rizzi's (1997) terms, the complementizer system looks at two directions, expressing information relevant to both the outer clause and the inner one. In the parallelism we are trying to draw, if high Force expresses clause-embedding properties (e.g., speech act, clause type), low-*che* mediates the eventive requirements carried by the causative verbs and the ones expressed by the infinitival verb—specifically, the presence or absence of the ProcP projection. In other words, we propose that low-*che* is a syntactic reflex of two converging forces: the dynamic eventuality type of the infinitival VP; and the selectional requirements of *fare* in embedding only dynamic eventualities (not states). This proposal captures both the semantic restriction to eventive predicates and the transparency effects (e.g., clitic climbing, binding) observed in FCIs, since low-*che* does not introduce an opaque CP phase.⁵

In sum, we take low-*che* to be a dedicated marker of event-structural licensing, mediating between the causative verb *fare* and the dynamicity of the embedded infinitival predicate. Its role is not to introduce propositional content, but rather to satisfy syntactic and interpretive constraints on eventive causation.

4. A syntactic proposal for the pragmatics of the FCI

In this section, we investigate how negation interacts with the structure of the FCI, with a particular focus on the contrast between constituent and sentential negation, and what this reveals about the discourse and syntactic properties of the construction. We begin by observing that constituent negation is fully compatible with FCIs. In (26), the negative operator targets a constituent inside the embedded infinitival clause.

- (26) Visto che sono stanco, oggi faccio che non andare a lavoro.
 since that be.1SG.PRES tired, today do.1SG.PRES that not go.INF to work
 ‘Since I’m tired, today I end up not going to work.’

In this case, the speaker is implying that the usual conditions under which they would carry out the action are no longer relevant—so the action will not happen. In contrast, sentential negation, where the negative operator targets the tensed domain appears to be much more restricted.

- (27) a. ?Dai, non faccio che venire fin lì a questo punto!
 c’mon, not do.1SG.PRES that go.INF until there at this point
 ‘C’mon, I might as well not come all the way there at this point!’

⁵ An open question concerns whether low Force is part of a broader low periphery that also includes low Fin(iteness). One possible empirical domain worth looking in this respect is to revisit the prepositional complementizers *di* and *a* found in restructuring infinitives (Cinque 2006; Grano 2015). These elements, also compatible with transparency effects and often taken as introducing non-finite VPs, may be rethought as low Fin heads, if one pushes further a parallelism between the high-*di*, standardly expressing Fin in control infinitives (cf. Bianchi 2003; Moscati & Rizzi 2021; see Sgrizzi 2024 for developmental evidence for the difference between restructuring and control *di*) and restructuring-*di*. Reanalyzing *di* and *a* in this way would support the broader hypothesis that the low periphery mirrors the CP layer, encompassing Force, Topic, Focus, and Fin, each specialized for the different interpretative properties, but parallel to their left-peripheral counterparts.

- b.??Visto che sono già le 4 non faccio che andare in
 since that be.3SG.PRES already the 4 not do.1SG.PRES that go.INF at-the
 ufficio, ma me ne sto a casa
 office, but 1SG.DAT.CL it.CL stay.1SG.PRES at home
 ‘Since it’s already 4 o’clock, I won’t go to the office but will stay at home.’

We propose that the degraded status of (27) arises from the superficial similarity between the FCI and another construction available in standard Italian, bearing somewhat the opposite interpretation of the FCI:

- (28) Anna non fa altro che scrivere il report.
 Anna not do.3SG.PRES else that write.INF the report
 ‘Anna does nothing but write the report.’

Unlike the FCI in (27), the construction in (28) is perfectly acceptable under sentential negation. However, in (28), negation does not suppress the event, but rather highlights it as the only event available: Anna is continuously or exclusively engaged in writing the report. This is the semantic inverse of negating an FCI like in (27), where the action is explicitly not brought about given the contextual premise. In short, (27) cancels the occurrence of the event, while (28) isolates and reinforces it.

This semantic contrast already points to a fundamental distinction between the two constructions. But we can go further and show that FCIs and the construction in (28) differ syntactically as well. Consider the following minimal pairs:

- (29) a. Marco non fa (altro) che [dipingere]_{VP} / [quadri bellissimi]_{NP}.
 Marco not do.3SG.PRES else that [paint.INF] / [wonderful pictures]
 ‘Marco does nothing but [paint] / [beautiful pictures].’
 b. Marco fa che [dipingere]_{VP} / *[quadri bellissimi]_{NP}.
 Marco do.3SG.PRES that [paint.INF] / *[wonderful pictures]
 ‘Marco ends up [painting] / *[beautiful pictures].’

In (29a), both a VP and an NP can occur as embedded complements. In the FCI in (29b), by contrast, only a verbal projection is acceptable; inserting an NP leads to ungrammaticality. This asymmetry suggests that the construction in (28) really draws on the nominal nature of Italian infinitives (cf. Raposo 1989; Kayne 2000), which allows them to occur in NP-licensing environments. The presence of *altro* ‘else’ in (28) further supports this nominal analysis, as a restrictive relative clause reading might have been triggered, where the embedded XP (either an NP or a nominalized infinitive) serves to restrict the domain of the relative pronoun *altro*. This interpretation is available with other embedding verbs, as shown by the following minimal pair.

- (30) a. Non desidero (altro) che [mangiare]_{VP} / [macchine da corsa]_{NP}.
 not wish.1SG.PRES (else) that [eat.INF] / [cars of racing]
 ‘I wish nothing but [eat] / [racing cars].’
 b. Faccio che [mangiare]_{VP} / *[macchine da corsa]_{NP}
 do.1SG.PRES that [eat.INF] / *[cars of racing]
 ‘I end up [eating] / *[racing cars].’

The contrast between (30a) and (30b) reinforces the idea that FCIs do not tolerate NP complements, and thus cannot be subsumed under the relative-clause-like analysis possibly involved in construction like (30a). This confirms that FCIs are syntactically distinct and should be analyzed as a separate phenomenon.

Nonetheless, the question remains: why is sentential negation generally incompatible with FCIs, even though the relevant inflectional layer is clearly projected, as seen in previous sections? If TP is present, then the structural position for the negative operator — NegP — should be available as well. We propose that the incompatibility arises not from structural reasons, but from discourse-related constraints.

As briefly noted in the introduction, FCIs are charged with a specific pragmatic reading: they convey that a given eventuality is contextually licensed—that is, it is brought about as a function of relevant circumstances. Let us consider two contrasting contexts to illustrate this:

(31) **CONTEXT:** Speaker B normally works every day from 7 a.m. to 4 p.m.:

A: Come mai ti sei svegliato alle 6?
how ever you.2SG.CL be.2SG.PRES wake-up.PTCP at 6
'How come you woke up at 6?'

B: #Perché oggi faccio che andare al lavoro alle 7.
because today do.1SG.PRES that go.INF to work at 7
'Because today I end up going to work at 7.'

(32) **CONTEXT:** Speaker B normally works every day from 7 a.m. to 4 p.m.:

A: Come mai ti sei svegliato alle 7?
how ever you.2SG.CL be.2SG.PRES wake-up.PTCP at 7
'How come you woke up at 7?'

B: Perché oggi faccio che andare al lavoro alle 9.
because today do.1SG.PRES that go.INF to work at 9
'Because today I end up going to work at 9.'

Though both utterances are structurally identical, only (32) is felicitous. The key difference lies in the contrastive interpretation: (32) arises from the negation of contextually available alternative, such as going to work at 7. In fact, (32) can be paraphrased as:

(33) Perché oggi faccio che andare al lavoro alle 9 **invece che alle 7**.
because today do.1SG.PRES that go.INF to work at 9 **instead that at 7**
'Because today I end up going to work at 9 **instead of at 7**.'

This supports the idea that FCIs are associated with a contrastive focus interpretation, able to activate the set of alternatives and negate it. In cartographic terms, this means that FCIs target the left-peripheral FocusP, giving rise to contrastive focus effects (Rizzi 1997; Rizzi & Bocci 2017). This hypothesis makes clear structural predictions: if the TP is fronted into Spec,FocP, then sentential negation becomes degraded, since NegP and FocP belong to the same (quantificational) featural class (Rizzi 2004). Our proposal, then, is as follows: in FCIs, the TP is attracted to the left-peripheral Spec,FocP, yielding the relevant interpretation.

- (34) [_{FocP} [_{TP} ... [_{cheP} *che* ... [_{VP} VP]]] _I Foc [... [_{TP} $\bar{T}$ [_{cheP} *che* [_{VP} *pro* ...

This movement renders the co-occurrence of sentential negation degraded, because Neg and Foc interfere with each other syntactically and interpretive (see Frascarelli 2000; Greco 2019 for other domains in which similar proposals as been made). Finally, this account can be evaluated using again standard cartographic diagnostics, by testing whether other elements—such as topics or wh-elements—can intervene in the relevant left-peripheral area, and whether they create similar interpretive or syntactic conflicts within the left periphery of the FCI.

5. The left periphery of the FCI

In this section, we evaluate our structural hypothesis by exploring how the left periphery of the FCI behaves with respect to the activation of Force, Focus, and Topic. If the pragmatic conditions licensing the FCI arise as a consequence of the focalization of the FCI's TP, we expect no left-peripheral focus to be available, as that position would be already occupied. In what follows, we see that FCIs are incompatible with focalized (contrastive) constituents, regardless of whether the focus is pre-verbal or embedded in the infinitival clause.

- (35) a. *Visto che il supermercato era ancora aperto, [IL LATTE]_{Foc}
 since that the supermarket is.3SG.PRES still open, [THE MILK]_{Foc}
 ho fatto che prendere (non il vino).
 have.1SG.PRES do.PTCP that buy.INF (not the wine)
 'Since the supermarket was still open, THE MILK I ended up buying (not the wine).'
- b. *Visto che il supermercato era ancora aperto, ho fatto
 since that the supermarket is.3SG.PRES still open, have.1SG.PRES do.PTCP
 [IL LATTE]_{Foc} che prendere (non il vino).
 [THE MILK]_{Foc} that buy.INF (not the wine)
 'Since the supermarket was still open, I ended up THE MILK buying (not the wine).'
- c. *Visto che il supermercato era ancora aperto, ho fatto
 since that the supermarket is.3SG.PRES still open, have.1SG.PRES do.PTCP
 che [IL LATTE]_{Foc} prendere (non il vino)
 that [THE MILK]_{Foc} buy.INF (not the wine)
 'Since the supermarket was still open, I ended up THE MILK buying (not the wine).'

Each variant in (35) attempts to focalize the DP *il latte* 'the milk', either pre-verbally, as part of the left-periphery of *fare*, or inside the infinitival clause. All result in ungrammaticality. This strongly supports the idea the structural clausal position of the FCI is already active, blocking other focalized constituents. This is further confirmed by (36), which shows that wh-phrases - also licensed in Spec, FocP (Rizzi 1997), are similarly degraded in FCIs.

- (36) ?Cosa hai fatto che mangiare oggi?
 what book do.2SG.PRES that eat.INF today
 'What did you end up eating today?'

Moving on to Force and Topic, if the TP of FCIs are indeed moved in the left-peripheral focus position, we expect them to be embeddable under higher Force projections, i.e. function as complement clauses introduced by *che*, given the relative order of these projections. This prediction is confirmed by examples such as (37).

- (37) a. Ho il sospetto che Gianni farà che partire
 have.1ST.SING.PRES the suspect that Gianni do.3SG.FUT that leave.INF
 senza avvisare nessuno.
 without telling.INF nobody
 ‘I suspect that Gianni will go ahead and leave without telling anyone.’
- b. Ho sentito che Gianni farà che partire senza
 have.1SG.PRES hear.PTCP that Gianni do.3SG.FUT that leave.INF without
 avvisare nessuno.
 telling.INF nobody
 ‘I heard that Gianni will go ahead and leave without telling anyone.’

In both cases, the matrix predicate introduces a finite CP via high-*che*, embedding a subordinate clause containing the FCI. The grammaticality of these examples supports the view that FCIs can be properly embedded under ForceP.

A second prediction concerns the relative order between topicalized constituents and the FCI’s TP, confirmed in (38).

- (38) Dato che ho visto il supermercato aperto, [il latte]_{Top}
 since that have.1SG.PRES see.PTCP the supermarket open, [the milk]_{Top}
 ho fatto che prendertelo io.
 have.1SG.PRES do.PTCP that buy.INF=CL I.NOM
 ‘Since I saw the supermarket was open, I went ahead and got you the milk.’

To summarize, the evidence from embedding under Force, compatibility with Topics, and incompatibility with Focus leads to a consistent structural picture. We propose that in FCIs, the TP is fronted into Spec,FocP, yielding its characteristic interpretation: an action is brought about in response to relevant contextual triggers, while alternatives are implicitly negated or suppressed. This hypothesis is able to explain why overt focal constituents are banned in the left-periphery of the FCI, and why sentential negation gives rise to degraded judgements.

6. Conclusions

In this study, we have offered a first syntactic and interpretive account of *Fare+Che+Infinitive* (FCIs) in Turinese Italian constructions, which exhibit a range of non-canonical properties that set them apart from both standard causative structures and other infinitival clauses. Drawing on several syntactic diagnostics and discourse properties, we have argued that FCIs are best analyzed as monoclausal structures featuring a richly articulated low left periphery, following the cartographic framework of Rizzi (1997), Belletti (2004), and related work.

A key claim throughout has been that *che* in FCIs is not the standard high complementizer introducing embedded CPs. Rather, it functions as a low-peripheral operator, situated below Tense, and possibly linked to the eventive requirement of the causative verb. Unlike the high-*che*, which is associated with finiteness and clause type, the low-*che* in FCIs may signal a clause-internal interface with eventuality type, more specifically, the dynamicity requirement imposed by *fare* as a causative predicate.

We have shown that FCIs are compatible with typical transparency effects—such as clitic climbing, left-dislocation, and binding across *che*, strongly suggesting that no syntactic barrier intervenes between the matrix and embedded domains. At the same time, FCIs resist sentential negation, contrastive focus, and wh-extraction, which we have attributed to the fact that the TP of the embedded infinitival clause is fronted into Spec,FocP, a position reserved for contrastive or focalized material. This movement blocks competing elements (such as focalized elements or wh-phrases), and interferes with elements belonging to the same featural class (i.e. negation).

Regarding the subject of the FCI, we have adopted the view that it is the initiator of the event, merged in Spec,CauseP, as in Belletti (2017). However, we have remained agnostic as to whether the infinitival subject is a true syntactic PRO or the result of a raising operation. This distinction matters for the theoretical modeling of the control relation between the matrix subject and the embedded predicate. If we adopt Grano's (2015) proposal that exhaustive control predicates (those that disallow partial control) are derived via raising, then the FCI is naturally grouped within this class. Supporting this view is the observation that FCIs do not permit partial control, as shown in (39):

- (39) *Gianni ha fatto che incontrarsi alle quattro.
 Gianni have.3SG.PRES do.PTCP that meet.INF=CL.REF at four
 ‘*Gianni arranged for himself to meet at four.’

This points toward a raising-based derivation, where the subject of the infinitive is not an autonomous PRO, but rather originates in the embedded clause and raises to Spec,CauseP (or InitP; cf. Ramchand 2008). This view is further motivated by the semi-functional status of *fare* in FCIs (Cinque 2006; Cardinaletti & Shlonsky 2004), which places it in a class of light verbs that do not fully lexicalize a VP.

In sum, the picture that emerges is one in which FCIs instantiate a dedicated syntactic configuration: a monoclausal structure with a focus-like interpretation, built on a dynamic vP, licensed by a specialized use of *fare* and mediated by a low-*che* head. The interaction between discourse structure (focus, pragmatic conditions), clausal structure (Force, Fin, Neg, and related cartographic diagnostics), and event structure (dynamicity, causation) makes FCIs a rich empirical window into the inner workings of clause structure in this variety of Italian. Future research may explore how FCIs interact with modality, aspectual auxiliaries, or discourse particles, whether similar constructions exist crosslinguistically with comparable cartographic profiles, and - most importantly - the diachronic development of this constructions and its relation with the dialect of Piedmontese.

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Abbreviations

ACC	accusative	CL	clitic
DAT	dative	FUT	future
IMP	imperative	IMPFV	imperfective aspect
INF	infinitive	NOM	nominative
PL	plural	PRES	present
PST	past	PTCP	past participle
REFL	reflexive	SUBJ	subjunctive
1PL	first person plural	1SG	first person singular
2PL	second person plural	2SG	second person singular
3PL	third person plural	3SG	third person singular

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Anything goes? – A questionnaire study on scope ambiguities in Ukrainian

Xue Sun & Polina Berezovskaya

This paper examines scope ambiguity in doubly quantified sentences in Ukrainian, a “free” word order language. Drawing on data from a questionnaire study, we show that sentences with existential quantifiers in subject position and universal quantifiers in object position exhibit scope ambiguity in both SVO and OVS structures. Our findings challenge the view that syntactic structure constrains quantifier scope and suggest that the availability of Quantifier Raising (QR) is not tied to surface word order. The paper contributes new empirical evidence on scope ambiguities in Ukrainian and offers a syntactic analysis with the corresponding semantic mapping of SVO and OVS configurations.

1. Introduction

The relationship between word order and scope rigidity remains an active area of research in syntax and semantics. This issue has been widely explored from both theoretical and experimental perspectives in languages with rigid word order, such as English (May 1978; Heim & Kratzer 1998; Anderson 2004), and in free word order languages, such as Russian (Ionin 2001; Ionin & Luchkina 2018), German (Frey 1993; Pafel 2005; Bobaljik & Wurmbrand 2012; Philipp & Zimmermann 2020, 2025) and Polish (Abels & Grabska 2022). This paper investigates Ukrainian, another free word order language, and provides further empirical evidence on the interaction between word order and scope rigidity. To the best of our knowledge, doubly quantified sentences in Ukrainian have neither been systematically studied (but see Antonyuk & Mykhaylyk 2022 for an investigation of superiority and scope freezing in ditransitive constructions), nor examined using fieldwork or experimental methods, in contrast to the extensive literature on quantifier scope in English and partly Russian. This study therefore pursues two objectives: (i) to provide new data on scope ambiguities in Ukrainian, assessing where Ukrainian stands in the cross-linguistic picture of free word order languages; and (ii) to provide a syntactic analysis of the available readings across different word orders that can be plausibly mapped to interpretable Logical Forms. We investigate sentences in Ukrainian such as the example in (1)

with an existential quantifier in the subject and the universal quantifier in the object position.

- (1) Odná studentka vyrišyla kožnu problemu.
 one.NOM student.NOM solved every.ACC problem.ACC
 ‘One student solved every problem.’

Since formal linguistic and semantic research on Ukrainian is scarce, we see the need for more empirical and theoretical investigation of it, and offer a small-scale questionnaire study in Section 3. The paper is structured as follows: In Section 2, we cover the necessary background on scope ambiguities in Ukrainian and the methods we used. Section 3 provides the questionnaire study and its results. In Section 4, we develop an analysis of SVO and OVS structures in Ukrainian that is based on existing analyses of English and Russian and binding data for the OVS word order. Section 5 concludes with a summary and avenues for future research.

2. Background

We begin in Section 2.1 with a discussion of previous theoretical and empirical analyses of sentences containing two quantifiers, including work on English and cross-linguistic studies. Background on the relevant grammatical properties of Ukrainian and an overview of the field-work methodology are then presented in Sections 2.2 and 2.3, respectively.

2.1. Previous research on scope ambiguities cross-linguistically

In English, sentences with two quantifiers are ambiguous between surface-scope and inverse-scope readings, as illustrated in (2). Following Montague’s type-driven compositional semantics (Montague 1973), and under standard assumptions (Heim & Kratzer 1998), the semantic type of a transitive verb is $\langle e, \langle e, t \rangle \rangle$, and that of a quantified DP is $\langle \langle e, t \rangle, t \rangle$. Quantified DPs in the object position have to undergo QR (May 1978; Fox 2000) to avoid this type mismatch. For the surface-scope reading in (2a), the object undergoes obligatory QR. Under the VP-internal subject hypothesis, the subject moves to the Spec-TP position c-commanding the QR-ed object at Logical Form (LF).¹ The inverse-scope reading in (2b) arises when the object undergoes QR, and the subject reconstructs from Spec-TP to Spec-VP, a position which is lower than the QR-ed object.²

- (2) Some boy kissed every girl.

a. Surface Scope Reading (SSR):

some $>$ $\forall$ ³

There exists some boy x , s.t. for every girl y , x kissed y .

LF: [_{TP} some boy₁ [_{VP} every girl₂ [_{VP} t_1 kissed t_2]]]

¹ Throughout this paper, we assume the VP-internal subject hypothesis and adopt a single-layer VP structure for simplicity, as the presence of ν P does not affect quantifier scope.

² For English, a simpler analysis is available if we do not assume that the subject is base-generated in Spec,VP. On this view, only obligatory QR must apply to the object DP, and the contrast between surface and inverse scope readings arises from different landing sites for the raised object—either adjoining to VP or to TP.

³ We indicate scope relations by $>$: The quantifier to the left of $>$ takes wide scope w.r.t. the quantifier on the right-hand side.

b. Inverse Scope Reading (ISR):

 $\forall > \text{some}$ For every girl y , there exists some boy x , s.t. x kissed y .LF: $[_{VP} \text{ every girl}_2 [_{VP} \text{ some boy kissed } t_2]]$

Anderson (2004) demonstrates, on the basis of psycholinguistic experiments, that interpreting a doubly quantified sentence with inverse scope leads to increased processing cost, even in contexts that strongly support the inverse-scope interpretation. Since processing cost is closely tied to syntactic complexity, Anderson (2004) proposes the Processing Scope Economy (PSE) principle, as stated in (3). According to this principle, deriving the inverse-scope reading requires both QR of the object and reconstruction of the subject to Spec-VP (or raising the QR-ed object from its VP-adjoined position to a position higher than the subject), making it more difficult to process than the surface-scope reading.

(3) Processing Scope Economy:

The human sentence processing mechanism prefers to compute a scope configuration with the simplest syntactic representation (or derivation). Computing a more complex configuration is possible but incurs a processing cost (Anderson 2004:31).

Different from rigid word order languages such as English, free word order languages are often said to “wear their LF on their sleeves” (Szabolcsi 1997; Pesetsky 1989), as observed, for instance, in Russian, German, and Japanese (Hoji 1985; Lechner 1996; Ionin 2001). In these languages, the availability of overt scrambling constrains covert QR. For instance, Ionin (2001) argues that doubly quantified sentences in Russian exhibit scope freezing. Specifically, the Russian Subject-Verb-Object (SVO) word order sentence in (4a) allows only the surface scope reading, and the same holds for the Object-Verb-Subject (OVS) word order in (4b).

(4) a. [Odin mal’čik] poceloval [každyju devočku].

one.NOM boy.NOM kissed every.ACC girl.ACC

‘One (specific) boy kissed every girl.’

 $\text{one} > \forall; * \forall > \text{one}$

b. [Odnju devočku] poceloval [každyj mal’čik].

one.ACC girl.ACC kissed every.NOM boy.NOM

‘For one (specific) girl, every boy kissed that girl.’

 $\text{one} > \forall; * \forall > \text{one}$

(Ionin 2001:(79))

Ionin (2001) proposes that scope ambiguity is also influenced by Information Structure. We will briefly address the issue of Information Structure in Ukrainian in the next Section 2.2. According to Ionin (2001), different discourse configurations are conveyed through distinct word orders, and covert QR would be superfluous in languages with flexible word order. In intonationally neutral OVS sentences, such as (4b), the preverbal element serves as the topic, preventing the scrambled object from reconstructing to its base position. Covert QR to a position above the preverbal element is thus not possible, irrespective of whether it concerns the subject or the object.

However, recent experimental findings challenge the view that free word order languages are scope rigid. Contrary to Ionin (2001), Ionin & Luchkina (2018) argue that scope in Russian is not frozen, but that there is instead a preference for surface-scope readings. Likewise, Antonyuk (2006, 2019) proposes that Russian permits QR with properties similar to those observed in English. Experimental studies on Polish (Abels & Grabska 2022) and German (Philipp & Zimmer-

mann 2020, 2025) further support this view. These findings call into question the assumption that the availability of QR is inherently restricted by the presence of scrambling.

2.2. Ukrainian

Ukrainian is an East Slavonic language that belongs to the Indo-European language family. It is closely related to Belorussian and Russian. Ukrainian is written in the Cyrillic script. According to Eberhard et al. (2025),⁴ Ukrainian has a population of 30,800,000 (2016 census) in Ukraine itself and 39,019,860 users worldwide. The language has the status of being “institutional”, i.e., it has been “developed to the point that it is used and sustained by institutions beyond the home and community” Eberhard et al. (2025).

The most relevant grammatical features of Ukrainian discussed here can be found in Pugh & Press (1999) and Eberhard et al. (2025). In terms of the phonetic inventory, Ukrainian possesses 32 consonant and 6 vowel phonemes. It is a non-tonal, free stress language. Ukrainian’s canonical word order is SVO. It is a language that does not display overt articles. Ukrainian nouns have a complex declensional system involving (i) three grammatical genders (masculine, feminine, and neuter), (ii) 7 cases (nominative, genitive, dative, accusative, instrumental, locative, and vocative: *Anno! Pavle! Ivane! Bat’ku! Dzhon(e)!* (Pugh & Press 1999:105) and (iii) number (singular and plural). Ukrainian verbs are inflected for tense (present, past, future), aspect (imperfective and perfective), and mood (indicative, imperative, subjunctive). The verb is fully conjugated in the present tense (‘non-past’). Verbs agree in person (first, second, or third) and number (singular or plural) with the subject. For the non-past, this means agreement in person and number, while for the past, this means agreement in number and gender.

According to Pugh & Press (1999), the passive can be formed in three different ways: (i) either with the help of the past passive participle (PPP), (ii) the particle *-sya*, or (iii) the third person plural form of the verb. For option (i), the past participle, the participle is formed from a transitive verb. In contrast to other Slavonic languages, the PPP can be either perfective or imperfective. Rather unexpectedly, the object appears in the accusative. Pugh & Press (1999) suggest that “...this shows an incomplete separation of the passive from the active” (p. 251). An example is provided in (5):

- (5) Cju knyžku bulo napysano mnoju.
 this.ACC book.ACC was write.PST-PART me.INS
 ‘This book was written by me.’ (our glossing, Pugh & Press 1999:(252))

The Ukrainian passive will become relevant in this paper when binding data is discussed in Section 4.

Since Ukrainian is a free word order language, Information Structure is important, as already mentioned before. Kulyk (1961) emphasizes the syntactic flexibility of Ukrainian, noting that while the default word order is SVO, OVS or Verb-Subject-Object (VSO) are permissible. These variations are not arbitrary and serve to highlight or foreground specific sentence elements, i.e., topic-focus articulation. For instance, topicalized structures where the object is fronted are quite common in Ukrainian. According to Mykhaylyk (2011), who cites a lot of previous literature,

⁴ See: Eberhard, D. M., G. F. Simons & C. D. Fennig (eds.) (2025). *Ethnologue: Languages of the World*. SIL International. Retrieved 16th November 2025, from <https://www.ethnologue.com/language/ukr/>

in Slavic languages, scrambling has also been associated with Information Structure. New and unknown objects usually remain in post-verbal position, while old/known/given objects may appear in pre-verbal position producing different word orders such as SOV, OSV, or OVS.

2.3. Fieldwork methodology

We conducted fieldwork following the gold standard of linguistic fieldwork methodology as proposed by Matthewson (2004, 2011); Chelliah & De Reuse (2010); Bower (2015) and Krifka (2019). Fieldwork plays a crucial role in theoretical syntax and semantics research, as it allows researchers to access negative evidence (evidence about when certain structures are not acceptable), which is absent in corpus data. Besides, subtle meaning differences and rare structures that cannot be easily found in a corpus or a descriptive grammar can be elicited via systematic fieldwork. Scope ambiguity is an excellent example which cannot be adequately represented in corpora. The typical fieldwork methods include eliciting translations of specific sentences, collecting grammaticality and acceptability judgments under controlled contexts, and using storyboards to prompt the production of targeted sentence structures.

In our study, we specifically aim to investigate whether sentences containing two quantifiers allow inverse scope readings. Therefore, Acceptability Judgments Tasks (AJTs) are the most common and appropriate tool, as they allow direct assessment of speakers' intuitions under controlled conditions. Our questionnaire includes both textual and visual contexts, which are designed to yield more robust evidence than would be possible from text contexts alone.

3. Questionnaire study on Ukrainian

The need for a questionnaire study on Ukrainian is clear, not only because the language remains underexplored in formal syntax and semantics, but also because scope-related judgments are subtle and require a targeted methodological approach for reliable elicitation. We conducted a small-scale questionnaire study with four language consultants that can be considered exploratory. We make no claims to exhaustivity and encourage further empirical and theoretical research on Ukrainian. We believe that our study is a good start for further work on Ukrainian in this domain.

Section 3.1 outlines the design of the empirical study, including details about the participants, the structure of the questionnaire, and sample items. Section 3.2 presents the results of our study.

3.1. Design of the study

The study involved four native Ukrainian-speaking adults, all residing in Germany at the time of our data collection. At the time of the interviews, all four of the participants had been residing in Germany for at most 2 years. All fieldwork sessions were conducted in person at the University of Tübingen. The elicitation involved two stages, with two participants in each stage. In Stage 1, both surface and inverse scope readings for SVO and OVS sentences were found to be accessible. Based on these findings, Stage 2 of the fieldwork study was carried out with the

other two participants to explore these patterns further. Three different ATJ questionnaires were used during the fieldwork sessions. The first two participants completed the same version, while the third and fourth participants received slightly different versions, as will be explained below. Participants were monetarily compensated for completing the questionnaire.

In the beginning, all participants completed a language background questionnaire that elicited demographic information (e.g., age, gender, place of birth), their native language, other languages spoken, and their self-rated proficiency in each, as well as contexts of language use. They were then asked to perform the Acceptability Judgment Tasks (AJTs). The elicitation sessions with the first two participants were exploratory. Our primary aim was to examine the use of quantifiers and the structure of doubly quantified sentences in Ukrainian, as well as to test the (un)availability of SSR and ISR in both SVO and OVS sentences. Therefore, in this first stage, we employed a combination of tasks, with translation, picture-sentence matching, and a limited number of AJTs in each questionnaire. In these two sets of AJTs, both verbal and pictorial contexts were used, and the participants were asked to judge the acceptability of sentences relative to the provided verbal or visual context. Interestingly, we found that all both readings appeared to be available to these two participants.

In the second stage, we used AJTs only. For the AJT questionnaire of the third participant, the questionnaire comprised 30 items, including 16 target items and 14 filler items. Two factors were systematically manipulated in the construction of target sentences: word order (SVO or OVS) and different readings (SSR or ISR). Therefore, the contexts were categorized into four conditions: SVO SSR, SVO ISR, OVS SSR, and OVS ISR. An example of an SVO target sentence is provided in (6), with an SSR context in (6a) and an ISR context in (6b). An OVS example is given in (7), paired with SSR and ISR picture contexts in Figures 1 and 2.⁵ In all target sentences, the existential quantifier *one* was consistently placed before and c-commanded the universal quantifier *every* to avoid entailment of the readings. To obtain more data on ISRs, the AJT questionnaire for the fourth participant included an expanded set of ISR contexts, with seven items for each of the two ISR contexts and four items across two SSR contexts.

- (6) Odna studentka vyrišyla kožnu problemu.
 one.NOM student.NOM solved every.ACC problem.ACC
 ‘One student solved every problem.’ SVO
- a. SVO-SSR $\exists > \forall$:
 During a math class, the teacher assigned three exercises. Kateryna was really smart and solved all three of them.
- b. SVO-ISR $\forall > \exists$:
 During a math class, the teacher assigned three exercises. Kateryna solved the first one, Anastasiya solved the second, and Yuliya solved the third.
- (7) Odyn lixtar trymav kožen pirat.
 one.ACC lantern.ACC held every.NOM pirate.NOM
 ‘Every pirate held one lantern.’ OVS

⁵ The picture contexts were taken from UD Linguistics and Cognitive Science (2008), The scope fieldwork project, University of Delaware. Retrieved November 16th, 2025, from <https://udel.edu/bruening/scopeproject/scopeproject.html>

Figure 1. OVS-SSR $\exists > \forall$ Figure 2. OVS-ISR $\forall > \exists$

In the questionnaires designed for the last two participants, each test sentence was presented with either a verbal or a picture context. The distribution of picture and verbal contexts was balanced across all four conditions. Participants evaluated the acceptability of each target sentence using a five-point rating scale. A rating of *one* indicated “unacceptable,” while *five* signified “acceptable”. A rating of *three* represented a doubtful or uncertain judgment, with two and four indicating intermediate levels of acceptability leaning toward unacceptable or acceptable, respectively. We also included a comment box where consultants could provide feedback and comments on each individual item. This gives the consultants the opportunity to give feedback on the task or a concrete sentence, which can be quite revealing for the investigation. Example (8) presents a complete questionnaire item, including the instruction, a context, a target sentence, a judgment scale, and a comment box. English translations are provided for illustrative purposes only and were naturally not included in the actual questionnaire.

- (8) Оцініть, чи відповідає подане речення наведеному контексту або зображенню.
(Please assess whether the sentence below appropriately describes the given context or the given picture.)

Під час уроку математики вчитель задав три складні вправи. Тетяна надзвичайно талановита і розв’язала всі три вправи. (During a math class, the teacher assigned three difficult exercises. Tetyana is really talented and solved all three of them.)

Одна студентка вирішила кожну проблему. (One student solved every problem.)

1 2 3 4 5
 •-----•-----•-----•-----•
 unacceptable doubtful acceptable

Comments:

Based on the questionnaires and sample items presented in this section, participant judgments are reported in the following section.

3.2. Results

The results from Stage 1 and Stage 2 are presented in Section 3.2.1 and 3.2.2, respectively. In Section 3.2.3, the data from both stages are compared side by side, revealing patterns and reporting the acceptability rankings of the four readings.

3.2.1. Results of Stage 1

Table 1 presents the results from the first two participants. All SVO items in SSR contexts were rated as acceptable, whereas the acceptability of OVS items in SSR contexts was considerably lower, at 60%. In ISR contexts, OVS items were more acceptable than their SVO counterparts, with acceptability rates of 25% and 14%, respectively.

	Not Acceptable	Acceptable
<i>SVO SSR</i>	0%	100%
<i>SVO ISR</i>	86%	14%
<i>OVS SSR</i>	40%	60%
<i>OVS ISR</i>	75%	25%

Table 1. Acceptability of the four readings at Stage 1

Clearly, the inverse reading for the canonical SVO word order was the least acceptable with 14% in Stage 1. We will turn to the discussion of this result in Section 3.2.3.

3.2.2. Results of Stage 2

Table 2 shows the results from the other two participants of Stage 2, which provide more details of their judgments due to the 5-point Likert scale.

	1 point	2 points	3 points	4 points	5 points
<i>SVO SSR</i>	0%	0%	12.5%	12.5%	75%
<i>SVO ISR</i>	36.5%	0%	36.5%	9%	18%
<i>OVS SSR</i>	25%	0%	25%	0%	50%
<i>OVS ISR</i>	0%	9%	45.5%	0%	45.5%

Table 2. Acceptability of the four readings at Stage 2

As before in Stage 1, SVO sentences under SSR contexts received the highest ratings, with 75% judged at the 5-point level and 0% at the 1- or 2-point levels. OVS sentences under SSR contexts were rated slightly higher than OVS sentences under ISR contexts, with 50% and 45.5% of responses at the 5-point level, respectively. Both also had approximately 50% of judgments of 3 points and below. SVO sentences under ISR contexts received the lowest ratings, with only

18% judged at the 5-point level. Mean acceptability scores for the four readings were: SVO SSR: **4.63**, SVO ISR: **2.73**, OVS SSR: **3.5**, and OVS ISR: **3.82**.

3.2.3. Summary and discussion of the results

For methodological reasons, it was not possible to directly combine the data from the two stages. To provide a general overview, the Stage 2 results were therefore converted from mean ratings into percentages and compared with the Stage 1 percentages, as presented in Table 3.

	stage 1	stage 2
<i>SVO SSR</i>	100%	93%
<i>SVO ISR</i>	14%	55%
<i>OVS SSR</i>	60%	70%
<i>OVS ISR</i>	25%	76%

Table 3. Acceptability of the four readings across two stages in percentages

Based on the data in Table 3, several similar trends emerge across both Stage 1 and Stage 2. First, SVO SSR is the most acceptable reading, consistent with the fact that SVO is the default word order in Ukrainian as described in Section 2.2. In contrast, SVO ISR is the least acceptable, while OVS ISR is more readily available than SVO ISR in both stages, a pattern that aligns with experimental findings in German (Bott & Schlotterbeck 2012) and Russian (Ionin & Luchkina 2018). Bott & Schlotterbeck (2012) propose that ISRs of SVO and OVS doubly quantified sentences are accessed at different stages of sentence processing. Specifically, the inverse scope reading of OVS constructions becomes available during the reading process, while that of SVO constructions is only accessible at the post-interpretive stage. For Ionin & Luchkina (2018), the ISR of OVS constructions is more acceptable due to contrastive focus. When the focused indefinite appears as a preverbal object, the availability of ISR is significantly increased. In contrast, focusing the pre-verbal subject does not yield a significant increase in acceptability of ISR. In our data, however, the relative acceptability of OVS SSR and OVS ISR remains inconclusive, as the two stages reveal different patterns.

For the SVO ISR and OVS ISR conditions, we observe substantial differences between the two stages. In Stage 1, the dataset was very small, and each item accounted for a disproportionately large share of the results. Specifically, for SVO ISR, there were 7 items, 6 judged unacceptable; for OVS ISR, there were 4 items, 1 judged acceptable and 3 unacceptable. Furthermore, participants were restricted to a binary judgment: acceptable or unacceptable. While we take the Stage 1 data to suggest a general pattern, we regard the Stage 2 data as more reliable and informative for the reasons just outlined.

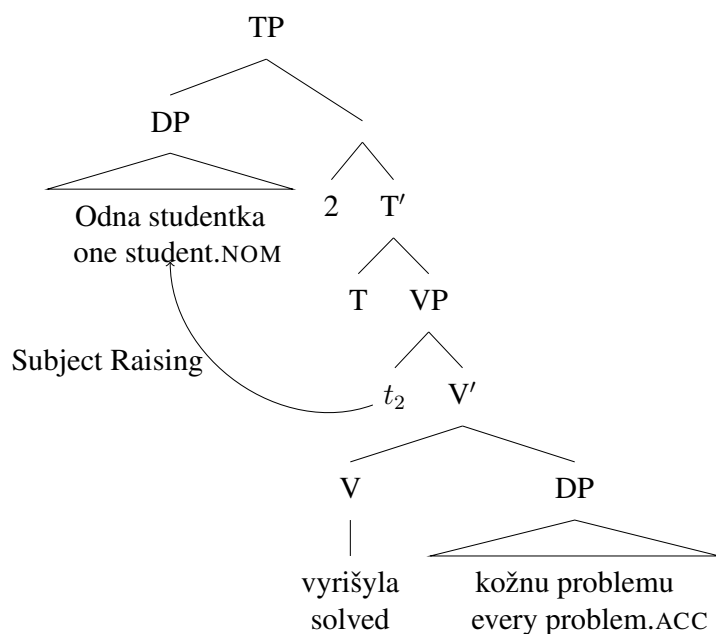
A closer look at the OVS ISR data shows that its acceptability falls in opposite directions across the two stages. In Stage 1, the acceptability rate was 25%, which lies on the non-acceptable side of the scale, whereas in Stage 2 it is 76%, which is on the positive side of the scale. Participant-level data indicate that, in Stage 1, 3 of 4 items were judged unacceptable. In Stage 2, one participant consistently rated the OVS ISR sentences with 5 or at least 3 points, while the other consistently gave it 3 points or lower. The overall pattern therefore appears to

4.1. SVO structures

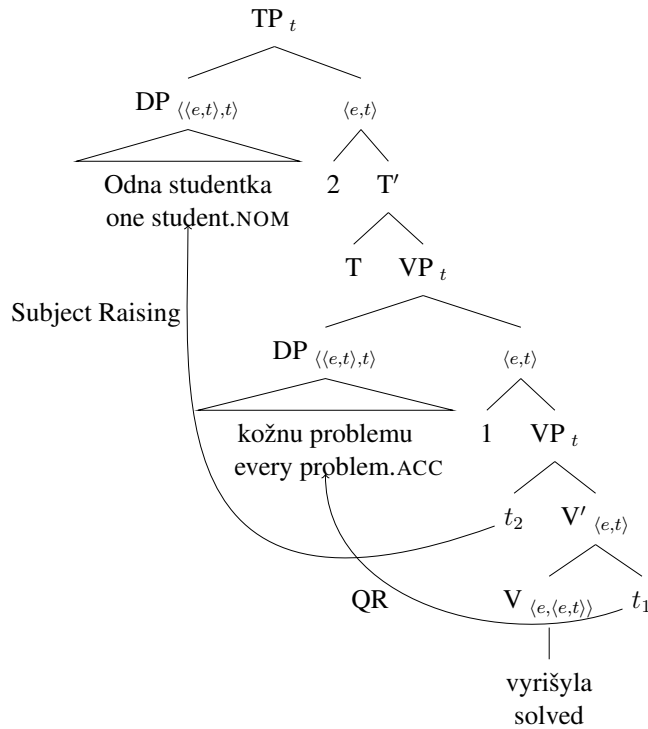
By adopting the VP-internal subject hypothesis, the Surface Structure of the SVO configuration for sentence (10) (repeated from (1)) is presented in (11). In this derivation, the subject moves from Spec-VP to Spec-TP, while the object remains within the VP. This structure is the same as the English counterpart, which has been discussed in Section 2.1. SVO is the canonical word order in Ukrainian. To derive the LF of SSR, the object must undergo QR and adjoin to VP to resolve the type mismatch, as illustrated in (12).

- (10) Oda studentka vyrišyla kožnu problemu.
 one.NOM student.NOM solved every.ACC problem.ACC
 ‘One student solved every problem.’ SVO

- (11) Surface Structure of the SVO sentence in (10):



(12) LF for the SSR of the SVO sentence in (10):



resulting truth conditions:

‘There exists one student x , such that for every problem y , x solved y .’

To achieve the inverse scope reading, two possible analyses can be considered. One approach is to adjoin the object to VP by QR, then adjoin it to TP, so that it c-commands the raised subject (May 1978). Alternatively, the subject can be reconstructed to Spec-VP, with the object adjoining to a position higher than the reconstructed subject (Johnson 2000). In the following part, we present an analysis based on the interaction of the quantified DP with negation and the Positive Polarity Item (PPI) деяких ‘some’ in Ukrainian, building on previous work on English (Johnson 2000) and Russian (Antonyuk 2019). The empirical evidence suggests that subject reconstruction is required for the object to take wide scope.

In English, *some* is a PPI and has to take scope over negation. Therefore, the sentence in (13) only allows an interpretation where the existential quantifier takes wide scope; It cannot yield the reading that no student has been met.

(13) I have not met some student.

$\exists > \neg$; $*\neg > \exists$
(Johnson 2000:(7))

With two quantifiers, the sentence in (14a) is ambiguous. It can mean that there exists a particular student who answered many of the questions. Alternatively, it can be interpreted as meaning that for many questions on the exam, there exist possibly different students who answered each one. However, in the presence of negation, sentence (14b) permits only one reading: there exists some student who did not answer many questions. This corresponds, of course, to the surface scope reading. The reading in which *many* takes scope over *some* is unavailable. It is the reading with the interpretation where for many questions on the exam, there exist possibly different

Since *some* is a PPI, it must stay in Spec-TP to take scope over negation. As shown by the readings of (14b), when *some* is forced to stay high due to the presence of negation, the object *many of the questions* cannot take scope over it and has to remain within the TP domain. Extending this reasoning to SVO sentences with two quantifiers, such as ‘One student solved every problem’, we see that to derive the inverse scope reading, the object cannot be moved above the raised subject, and the subject has to undergo reconstruction.

- As shown in (15), the counterpart of *some* in Ukrainian also functions as a PPI, requiring wide scope. However, the wide scope reading of the object disappears in (16). This suggests that subject reconstruction is necessary for the SVO structure to derive the inverse scope reading in Ukrainian.

- We illustrate the ISR LF for sentence (10) in (17). This is parallel to the behavior of the English counterpart of these constructions.

-
- The diagram illustrates the syntax-semantics interface for the sentence "Označte každou studentku, která vyřeší problém" (Mark every student who solves a problem). The tree structure is as follows:
- TP_t** (Top Level): The root of the tree, representing the entire clause.
 - T'**: The complementizer phrase, branching into:
 - T**: The tense head.
 - VP_t**: The verb phrase.
 - VP_t** branches into:
 - DP** $\langle \langle e, t \rangle, t \rangle$: The subject, which is the quantified noun phrase "každou studentku" (every student). This node is associated with the semantic type $\langle \langle e, t \rangle, t \rangle$.
 - $\langle e, t \rangle$** : The predicate, which branches into:
 - I**: The infinitival marker.
 - VP_t**: The inner verb phrase.
 - The inner **VP_t** branches into:
 - DP** $\langle \langle e, t \rangle, t \rangle$: The object, which is the noun phrase "Označte" (Mark). This node is associated with the semantic type $\langle \langle e, t \rangle, t \rangle$.
 - V'** $\langle e, t \rangle$: The verb head and complement, which branches into:
 - V** $\langle e, \langle e, t \rangle \rangle$: The verb "vyřeší" (solves).
 - t_1** : The trace of the object.
- Annotations and movement paths:
- Reconstruction**: A curved arrow points from the subject DP $\langle \langle e, t \rangle, t \rangle$ to the object DP $\langle \langle e, t \rangle, t \rangle$, indicating the reconstruction of the quantifier.
 - QR** (Quantifier Raising): A curved arrow points from the subject DP $\langle \langle e, t \rangle, t \rangle$ to the verb head V $\langle e, \langle e, t \rangle \rangle$, indicating the movement of the quantifier for scope resolution.
 - Semantic Types**: The types $\langle \langle e, t \rangle, t \rangle$ and $\langle e, \langle e, t \rangle \rangle$ are associated with the subject and object DPs, respectively, and the verb head V.
 - Translations**: The subject DP is translated as "každou studentku" (every student) and "every problem.ACC". The object DP is translated as "Označte" (Mark) and "one student.NOM". The verb head V is translated as "vyřeší" (solves) and "solved".

‘For every problem y , there exists one student x , s.t. x solved y .’

The SVO structure in Ukrainian shares similar properties with those of English and Russian, as SVO is its default word order in those languages.

Coming back to the question of why this SVO ISR is the least preferred reading and unavailable for many, we can make a parallel argument as Frey (1993) does for German. The obligatory QR of the object quantifier in (17) does not “count”, since it is a covert movement motivated by type mismatch (which would also need to apply in Frey’s example in (9b) that is claimed to be unambiguous). The subject in (17) has to be interpreted in its base (reconstructed) position. No overt movement or scrambling of the object quantifier in Frey’s sense has taken place. This would explain why in Ukrainian, this reading is highly dispreferred, if not impossible.

4.2. OVS structures

This subsection examines the syntactic structure and LFs of OVS configurations in Ukrainian. Drawing on binding data from the Weak Crossover (WCO) effects and reciprocals, we argue for specific positions of the subject and object in Ukrainian OVS sentences.

4.2.1. The position of the object

It has been proposed in the literature that the object in Russian OVS constructions exhibits binding properties typically associated with the subject position, i.e., Spec-TP position (Antonyuk 2021; Pereltsvaig 2021). The binding properties of the object in OVS configurations are unavailable to the object in SVO structures. The first piece of evidence comes from the WCO effect (Bailyn 2003). To check the effect, we adapted the examples from Antonyuk (2021: (2)) for Russian and elicited the corresponding judgments from our Ukrainian consultants. The Ukrainian data is shown in (18).

- (18)
- | | | | | | | |
|----|--|----------------------|----------------|----------------|------------------------|---------|
| a. | *İ _i | maty | lûbyt’ | kožnu | divčynu _i . | |
| | her.NOM | mother.NOM | loves | every.ACC | girl. | |
| | ‘Every girl is loved by her own mother.’ | | | | | SVO |
| b. | *Kožnu | divčynu _i | İ _i | maty | lûbyt’. | |
| | every.ACC | girl.ACC | her.NOM | mother.NOM | loves | |
| | ‘Every girl is loved by her own mother.’ | | | | | OSV |
| c. | Kožnu | divčynu _i | lûbyt’ | İ _i | maty. | |
| | every.ACC | girl.ACC | loves | her.NOM | mother.NOM | |
| | ‘Every girl is loved by her own mother.’ | | | | | OVS |
| d. | Kožnu | divčynu _i | lûbleno | İ _i | matir’û. | |
| | every.ACC | girl.ACC | love.PST-PART | her.INS | mother.INS | |
| | ‘Every girl is loved by her own mother.’ | | | | | passive |

The intended interpretation of all the sentences in (18) is: ‘*Every girl is loved by her own mother*’. (18a) is ungrammatical due to the WCO. The quantified DP in object position has to undergo obligatory QR to a position to the left of the subject, which is an A’-movement. In this case, the object *every girl* cannot bind *her mother*. As expected, (18b) is also unacceptable, since the scrambled object undergoes an overt movement that parallels the covert movement in

(18a). The LF representation for both (18a) and (18b) is given in (19a), where the object adjoins to VP via QR or scrambling.

In contrast, (18c) does not violate the co-reference and the binding relation changes. Here, the object undergoes A scrambling rather than A' scrambling, which suggests that the object in OVS occupies Spec-TP. The LF is shown in (19b). Although the objects in (18b) and (18c) both appear in the initial position, they undergo a different type of syntactic movement. Sentence (18c) gives rise to a variable-binding interpretation. The object in the OVS structure in (18c) occupies the same position as in the passive construction in (18d), rather than the A'-position in (18a,b), as illustrated in (19c). This suggests that OVS is indeed an instance of A-movement, analogous to passivization, which is well known to permit bound variable readings.

- (19) a. LF for (18a) and (18b):
 LF: $*[_{VP} \text{ every girl}_2 [_{VP} \text{ her mother loves } t_2]]$
 b. LF for (18c):
 LF: $[_{TP} \text{ every girl}_2 [_{VP} \text{ her mother loves } t_2]]$
 c. LF for (18d):
 LF: $[_{TP} \text{ every girl}_2 [_{VP} [V' \text{ loved } t_2] \text{ by her mother}]]$

The second piece of evidence comes from reciprocals (Antonyuk 2021; Pereltsvaig 2021). We took the Russian examples from Pereltsvaig (2021: (5)), constructed the corresponding Ukrainian sentences, and elicited the relevant judgments, as shown in (20). In (20a), the object *duelists* cannot c-command *each other* in the subject position, preventing the sentence from yielding the intended interpretation. (20b) also lacks the binding relation, as the scrambled object in OSV undergoes A'-movement. However, the OVS sentence in (20c) is acceptable. In this configuration, the scrambled object undergoes A-movement, creating new binding relations, which is like the A-movement of the object in the passive construction in (20d).

- (20) a. $*[Postrily \text{ o dyn odnogo}]_i \text{ vbyly duel'ystiv}_i$.
 shots.NOM each other killed duelists.ACC.PL
 'The duelists were killed by each other's shots.' SVO
 b. $*Duel'ystiv_i [postrily \text{ o dyn odnogo}]_i \text{ vbyly}$.
 duelists.ACC.PL shots.NOM each other killed
 'The duelists were killed by each other's shots.' OSV
 c. $Duel'ystiv_i \text{ vbyly } [postrily \text{ o dyn odnogo}]_i$.
 duelists.ACC.PL killed shots.NOM each other
 'The duelists were killed by each other's shots.' OVS
 d. $Duel'ystiv_i \text{ ubyto } [postrilamy \text{ o dyn odnogo}]_i$.
 duelists.ACC.PL kill.PST-PART shots.INS each other
 'The duelists were killed by each other's shots.' passive

Overall, the object in OVS structures occupies an A-position, likely Spec-TP, rather than an A'-position, such as any VP or TP adjoining positions. Evidence from WCO and reciprocal binding shows that the object in sentences with OVS word order can create new binding relations, unlike in SVO or OSV word orders, indicating that it undergoes A-movement, similar to passive constructions. We conclude that the Ukrainian object in OVS structures in Ukrainian occupies the Spec-TP position.

4.2.2. *The position of the verb*

Building on Pereltsvaig's (2021) analysis of Russian OVS structures, we propose that the verb in Ukrainian OVS configurations remains *in situ* and does not undergo verb raising. This is supported by the observation that verbs consistently follow adverbs and negation in Ukrainian, as illustrated in (21)⁷. Placing an adverb after the verb yields a contrastive focus reading for the adverb, while post-verbal negation results in constituent negation.

- (21) a. Choroši detektyvny romany často pyšut' žinky.
 good.PL mystery.PL novels.ACC often write.PL women.NOM
 'Good mystery novels are often written by women.'
- b. Choroši detektyvni romany ne pyšut' choloviky.
 good.PL mystery.PL novels.ACC not write.PL men.NOM
 'Good mystery novels are not written by men.'

Moreover, if we assume that the object in an OVS configuration occupies the Spec-TP position and the verb moves to T, the object and verb should form a specifier-head relation, which would block any intervening material. However, this prediction is not borne out: an indirect object can intervene between the object and the verb, as shown in (22).

- (22) C'u knyhu meni nadislav vydavec'.
 this.ACC book.ACC me.DAT sent publisher.NOM
 'The publisher sent me this book.'

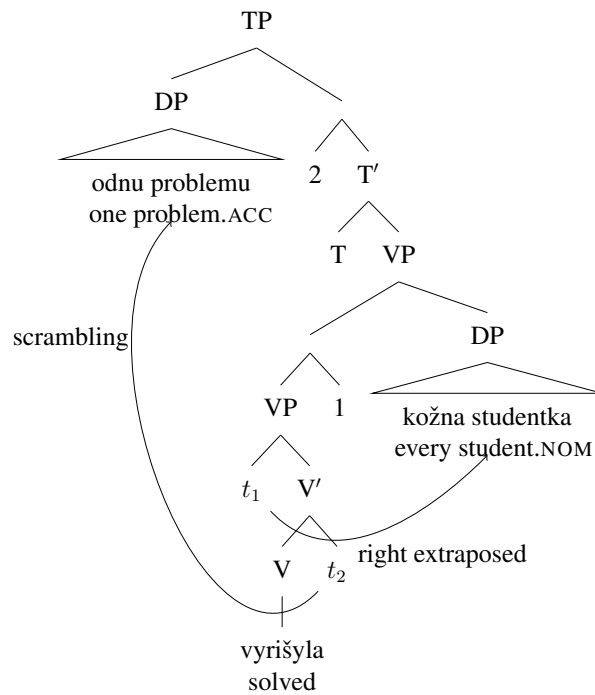
Based on the two pieces of evidence above, we propose that in Ukrainian OVS structures, the object moves to Spec-TP via A-scrambling, while the verb stays *in situ*. To derive the desired word order, the subject has to be right-extraposed. The surface structure for the OVS example in (23) is presented in (24). In the LF for the SSR, shown in (25), the right-extraposed subject is reconstructed to its base position, as reconstruction does not affect scope or semantic interpretation in the structure under discussion.

- (23) Odu problemu vyrišyla kožna studentka.
 one.ACC problem.ACC solved every.NOM student.NOM
 'Every student solved one problem.'

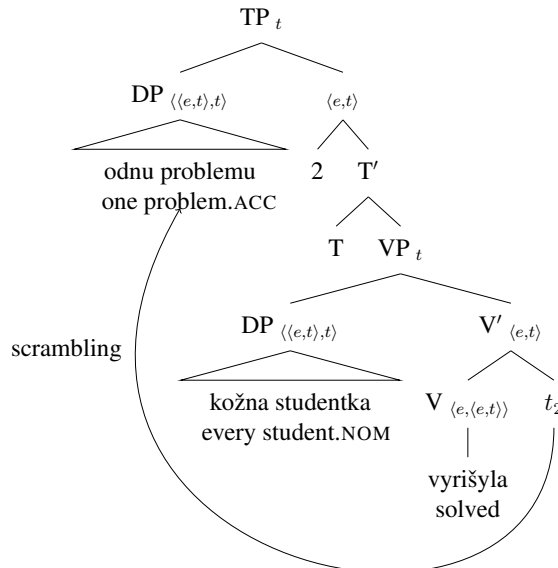
OVS

⁷ Again, we translated Pereltsvaig's Russian examples (Pereltsvaig 2021:(8)) into Ukrainian and elicited the corresponding data with our consultants.

(24) Surface Structure of the OVS sentence in (23):



(25) LF for SSR of the OVS sentence in (23):



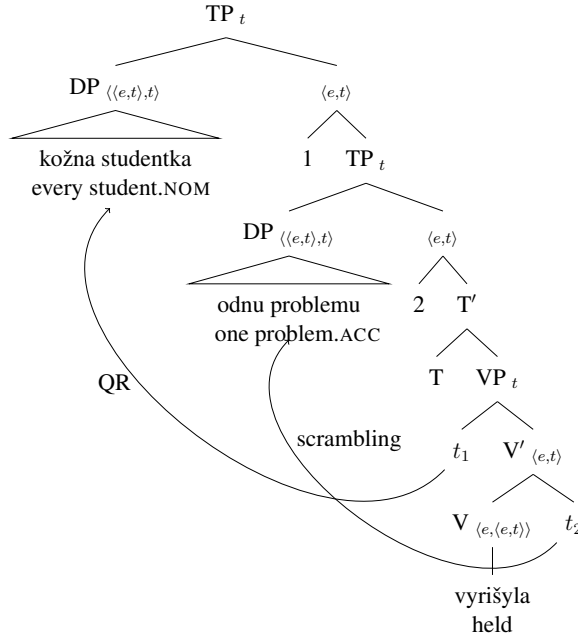
resulting truth conditions:

‘There exists one problem x , such that for every student y , y solved x .’

To derive the ISR, on the other hand, the scrambled object cannot reconstruct to its original VP-internal position, as A-scrambling changes the binding relations. Therefore, the only way

to obtain the ISR is by raising the reconstructed subject via QR to a position higher than the scrambled object. The corresponding LF for the ISR reading is illustrated in (26).

(26) LF for ISR of the OVS sentence in (23):



resulting truth conditions:

‘For every student y , there exists one problem x , s.t. y solved x .’

A summary of the transformations associated with each syntactic structure in both word order constellations is presented in Table 4.

LFs	Transformations
<i>SVO SSR LF</i>	obligatory QR for object + subject-raising
<i>SVO ISR LF</i>	obligatory QR for object + reconstruction of subject
<i>OVS SSR LF</i>	object A-scrambles to Spec-TP
<i>OVS ISR LF</i>	object A-scrambles to Spec-TP + subject QRs to TP

Table 4. Transformations in the proposed Logical Forms

In summary, we presented analyses of both SVO and OVS configurations. The Ukrainian data aligns closely with what has been reported for Russian. (Bailyn 2003, 2012; Antonyuk 2021; Pereltsvaig 2021).

5. Conclusions and further directions

Our study shows that Ukrainian allows both surface and inverse scope readings for SVO and OVS word orders, with ISRs for the canonical SVO word order being the least available reading.

This pattern indicates the coexistence of both QR and scrambling operations. The study provides partial support for the claim of Bobaljik & Wurmbrand (2012) that, crosslinguistically, no language is inherently scope-rigid; rather, scope rigidity arises only in specific configurations. However, our findings do not support their claim that the ISR is unavailable in sentences with canonical word order. Our findings also suggest that there is no categorical distinction between rigid and free word order languages in the interpretation of doubly quantified sentences (Philipp & Zimmermann 2020, 2025). It adds Ukrainian to the pleiad of existing research on free word order languages such as German (Philipp & Zimmermann 2020, 2025), Russian (Ionin 2001; Ionin & Luchkina 2018; Antonyuk 2006, 2019) and Polish (Abels & Grabska 2022).

Overall, contrary to the conventional view that free-word-order languages exhibit scope freezing (Szabolcsi 1997; Pesetsky 1989; Ionin 2001), our findings indicate that both surface and inverse scope readings are accessible in Ukrainian for both SVO and OVS word orders. For SVO sentences, ISR is not completely unacceptable, but strongly dispreferred.

Situating Ukrainian within the broader cross-linguistic landscape of ISR availability, particularly in comparison to Mandarin Chinese and English, we support the proposal by Philipp & Zimmermann (2020, 2025) that cross-linguistic differences are gradual rather than categorical. Focusing on structures with double quantifiers, Mandarin Chinese exhibits no availability of ISRs (Scontras et al. 2014),⁸ whereas English allows them readily. Ukrainian and German fall in between these two extremes. Between the two, a gradual difference also exists, ISR appears to be more accessible in Ukrainian than in German. In German, ISRs are relatively restricted when the quantifier appears in the middle field, but ISR becomes more available when the quantifier is fronted to the prefield (Pafel 2005; Beck & Gergel 2014). In contrast, our findings show that Ukrainian permits ISRs in both SVO and OVS word orders, though such interpretations are generally dispreferred by most speakers.

To ensure the reliability of our findings, more participants are needed for future fieldwork. Additional evidence for scope ambiguity, such as data from ditransitive structures, and additional evidence for QR through phenomena like Inverse Linking and Antecedent Contained Deletion would strengthen the analysis, as these constructions offer more direct empirical support for the plausibility of the QR-analysis. Based on participants' comments, it would also be valuable to investigate the semantic differences between the Ukrainian quantifiers *кожен/кожна* 'every' and *всі* 'all'. Moreover, exploring the processing difficulty associated with different syntactic operations, as well as the influence of Information Structure on scope interpretations presents promising directions for future research.

More broadly speaking, it remains an open question whether QR is universally available across languages. Given that Ukrainian patterns similarly to Russian and Polish in doubly quantified sentences, it is worth investigating potential microvariation within Slavic languages that our study might not have uncovered. Cross-linguistic comparisons with truly scope-rigid languages, where Mandarin in particular looks like a promising candidate, could also shed light on the typology of scope-taking mechanisms and the interplay between syntax and semantics.

⁸ For scope ambiguity in Mandarin Chinese, Zhou & Gao (2009) conducted an offline judgment task and argued that inverse scope readings of doubly quantified sentences are available under certain context. However, following Scontras et al. (2014), we suggest that Zhou & Gao (2009) did not take the entailment problem into account, since their data only include sentences in which *mei* 'every' takes scope over *yi* 'one' in surface order.

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Abbreviations

3SG	third person singular	PL	plural
ACC	accusative	PPI	Positive Polarity Item
AJT	Accessibility Judgment Tasks	PPP	past passive participle
DAT	dative	PSE	Processing Economy Principle
INS	instrumental	PST	past
ISR	Inverse Scope Reading	QR	Quantifier Raising
LF	Logical Form	SSR	Surface Scope Reading
NOM	nominative	SVO	Subject-Verb-Object
OVS	Object-Verb-Subject	VSO	Verb-Subject-Object
PART	participle	WCO	Weak Crossover

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ATB movement approach to V-V compound ellipsis in Japanese

Gen Kasai

This paper argues that verb-verb compounding ellipsis (VVCE) is derived by ATB movement rather than verb stranding VP ellipsis, which confirms the view that verb stranding VP ellipsis does not exist in Japanese (Hoji 1998; Oku 1998; Tanaka 2023; Tanabe & Kobayashi 2024). It is pointed out that verb stranding VP ellipsis approach cannot capture the fact that extraction from VVCE is unavailable. By contrast, the impossibility of extraction from VVCE is dealt with by ATB movement approach in tandem with chain formation (Blümel 2017). As a consequence, the current approach supports adjunct ellipsis to derive adjunct inclusive reading in Japanese and correctly bans extraction from VP fronted in ATB fashion.

1. Introduction

Natural Languages allow ellipsis such as VP ellipsis, as in (1). (1) illustrates that the VP phonologically elided in the following sentence can be properly construed under the identity with the antecedent VP *like tea* in the preceding sentence.

- (1) John likes tea, but Mary doesn't [_{VP} Δ].

It is logically possible that VP is elided after verb raising to T (or Neg), as in (2) (I call this verb stranding VP ellipsis (VSVPE), henceforth).

- (2) [_{TP} T-V₁ [_{VP} t_T-Obj (adjunct...)]].

However, it is controversial whether VSVPE is allowed crosslinguistically (Goldberg 2005; Landau 2020a; Landau 2020b; Simpson 2023) and in Japanese (Otani & Whitman 1991; Hoji 1998; Oku 1998; Hayashi 2015; Fujii 2016; Funakoshi 2016; Sakamoto 2017; Takita 2018; Tanaka 2023; Tanabe & Kobayashi 2024). This paper aims to explore the availability of VSVPE in Japanese, which contributes to the further understanding of VSVPE in a crosslinguistic way.

This paper focuses on v(erb)-v(erb) compound ellipsis (VVCE) (Yatabe 2001; Tatsumi 2019; Akimoto 2023), which is claimed to involve VSVPE but has not been discussed so much in the

previous literature on VSVPE. (3) shows that Japanese can elide a part of a verb-verb compounding verb (VVCE) (striketrough indicates ellipsis, hereafter). In (3), a verb-verb(V-V) compounding verb, *omoi* (think)-*dasu* (extract) ‘remember’ elides a part of the word, *omoi* ‘think’ with the object, *boku* ‘I’, phonologically deleted simultaneously.

- (3) a. Taro-ga boku-o omoi-dasu-ka boku-o omoi-dasa-nai-ka-wa doudemoii.
 T.-NOM I-ACC think-extract-or I-ACC think-extract-NEG-OR-TOP no.interest
 ‘It does not matter whether Taro recalls me or not.’
- b. Taro-ga boku-o omoi-dasu-ka ~~boku-o omoi~~-dasa-nai-ka-wa doudemoii.
 T.-NOM I-ACC think-extract-or I-ACC think-extract-NEG-OR-TOP no.interest
 ‘It does not matter whether Taro recalls me or not.’

Tatsumi (2019) mentions two potential approaches to VVCE: (i) verb stranding VP ellipsis and (ii) ATB movement of vP (VP). However, close examination of VVCE reveals that Japanese lacks VSVPE, supporting Oku (1998), Landau (2020b), Tanaka (2023), Tanabe & Kobayashi (2024).

This paper is organized as follows. Section 2 reviews previous literature on VVCE briefly before laying out my observations of extraction from VVCE and pointing out some issues on VSVPE approach to VVCE in section 3. Section 4 illustrates that ATB movement of vP in tandem with featural identity of movement chains proposed in Blümel (2017) explains the problematic data of VSVPE approach. Consequences of the current analysis are explored in Section 5, which upholds the existence of adjunct ellipsis to invoke adjunct inclusive reading with special contexts, and answers why lower copies created by ATB movement of VP prohibit extraction from themselves. Section 6 concludes this paper.

2. Previous literature on V-V compound ellipsis

This section summarizes previous literature concerning V-V compound ellipsis (VVCE) concisely. Before that, it is necessary to introduce what Japanese compounds are. Compounds in Japanese can be created productively, unlike those in European languages, as indicated in (4).

- (4) a. Noun-Verb:
 tabi (trip) - datsu (leave) ‘set out a journey’
- b. Verb-Verb:
 tobi (fly) - tatsu (leave) ‘jump out’
 tabe (eat) - sugiru (pass) ‘eat too much’
- c. Noun-Adjective:
 te (hand) - atui (thick) ‘cordial’
 sio (salt) - karai (hot) ‘salty’
- d. Verb-Adjective:
 musu(steam)-atui (hot) ‘steaming hot’
 yomi (read)-nikui (hard) ‘hard to read’

(Japanese; Kageyama 1999:(298))

This paper focuses attention on (4-b) and its ellipsis.

As stated above, V-V compounding verb allows ellipsis of VP(vP) including a part of the V-V compounding verb, repeated in (5). Two approaches are mentioned in Tatsumi (2019): (i) verb stranding VP ellipsis as in (6) and Figure 1 and (ii) ATB movement of VP as in (7) and Figure 2.

- (5) a. Taro-ga boku-o omoi-dasu-ka boku-o omoi-dasa-nai-ka-wa doudemoii.
 T.-NOM I-ACC think-extract-or I-ACC think-extract-NEG-OR-TOP no.interest
 ‘It does not matter whether Taro recalls me or not.’
- b. Taro-ga boku-o omoi-dasu-ka ~~boku-o omoi-dasa-nai-ka-wa~~ doudemoii.
 T.-NOM I-ACC think-extract-or I-ACC think-extract-NEG-OR-TOP no.interest
 ‘It does not matter whether Taro recalls me or not.’

(6) and Figure 1 indicate that the VP is elided after head raising of a part of V-V compounding verb *das* ‘extract’.¹ On the other hand, ATB movement approach extracts the vPs conjoined by *ka* ‘or’ to Spec XP higher than two conjoined phrases, which deletes the lower copies phonologically, as illustrated in (7) and Figure 2.²

- (6) Taro-ga boku-o omoi-dasu-ka [_{VP} ~~boku-o omoi-t₁~~]-dasa₁-nai-ka-wa doudemoii.

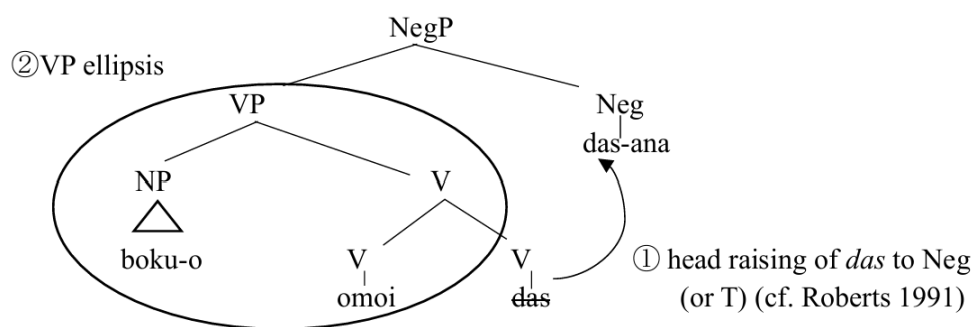


Figure 1. VSVPE

- (7) [_{VP1} Taro-ga boku-o omoi] [_{VP2} ~~Taro-ga boku-o omoi-t₁~~] -dasu₋₁-ka [_{VP3} ~~Taro-ga boku-o omoi-t₂~~]-dasa₂-nai-ka-wa doudemoii.

Although it is controversial which approach is correct, note that ATB movement approach can answer why VVCE is difficult in clauses involving no coordination/disjunction structure. As Yatabe (2001) points out, VVCE disallows a question-answer pair, as in (8) (VP ellipsis allows it, not to mention).

¹ Refer to Roberts (1991) for the argument that excorporation out of a complex head is possible in some cases.

² I use XP just for convenience.

- (8) a. Omoi-dasi-ta?
 think-extract-PST
 'Can you recall it?'
- b. Iya, omoi-dasi-te-nai.
 no think-extract-T-NEG
 'No, I couldn't recall it.'
- c. *Iya, ~~omoi~~-dasi-te-nai.
 no think-extract-T-NEG
 'No, I couldn't recall it.'

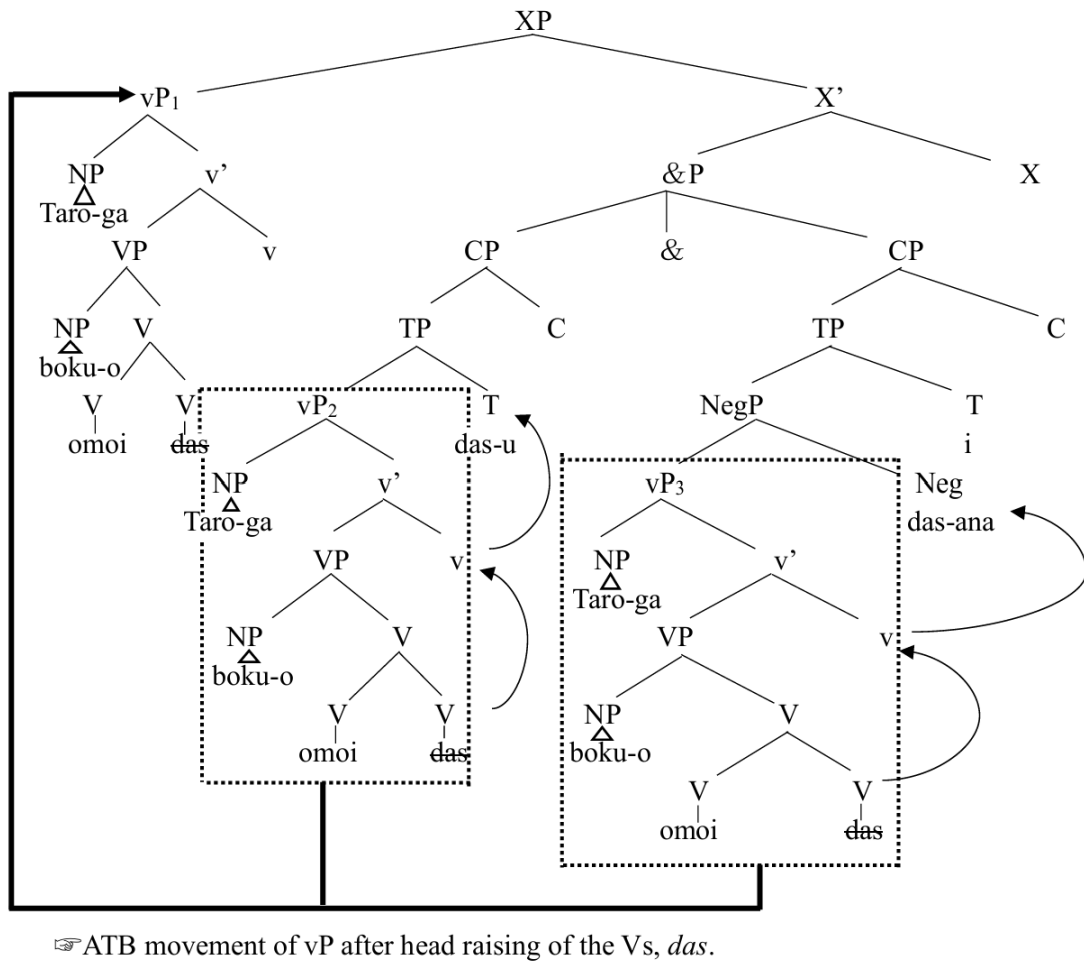


Figure 2. ATB Movement

In addition, (9) shows that VVCE is impossible across sentences.

- (9) a. Taro-wa suguni boku-o omoi-dasi-ta kedo
 T.-TOP soon I-ACC think-extract-PST but
 ‘Taro soon recalled me, but...’
- b. *Mary-wa omoi-das-anak-atta.
 M.-TOP think-extract-NEG-PST
 ‘Mary didn’t.’

(8) and (9) are explained by ATB movement approach to VVCE because ATB movement only occurs in a coordination/disjunction structure. This paper presents new data to support ATB movement approach to VVCE rather than VSVPE from the viewpoint of extraction from VVCE. This confirms that Japanese lacks VSVPE.

3. Observations against VSVPE approach to VVCE

Having introduced previous literature on VVCE, this section turns to brand-new observations of extraction from VVCE, arguing against VSVPE approach to VVCE. VP ellipsis permits extraction from itself freely in principle, as in (10) (A’ movement) and (11) (A movement). (10) illustrates that Wh movement of objects and adjuncts from VP ellipsis as well as topicalization is available. A movement such as those from VP ellipsis sites in passive and unaccusative sentences is also allowed, as in (11).

- (10) a. I know which book₁ Mary read t₁, and which book₂ Bill didn’t [VP Δ].

 (English; Fiengo & May 1994:(247))
- b. I know how fast₁ Adam could run t₁, but I don’t remember how fast₂ Hilary could [VP Δ].

 (English; Aelbrecht 2010:(177))
- c. On Matthew₁, you can rely t₁. On Thomas₂, you can’t [VP Δ].

 (English; Thompson 2014:(26))
- (11) a. This cat₁ was adopted t₁, but that one₂ was not [VP Δ].

 (English; Thompson 2014:(32))
- b. The lake₁ has frozen t₁, and the river₂ has [VP Δ], too.

 (English; Thompson 2014:32)

It is predicted that extraction from VVCE is possible if VVCE is derived by VSVPE, a type of VP ellipsis. However, this prediction is refuted by clause internal/long distance scrambling, raising

to subject, and raising to Spec TP from Spec VP in the following subsections.

3.1. Clause internal scrambling from VVCE

First, clause internal scrambling from VVCE is prohibited, as shown in (12) and (13). The object cannot be moved from VVCE, as in (12). In (12), the object *Mary* is disallowed to be extracted from the domain phonologically deleted by VVCE.

- (12) a. Boku-o₁ Taro-ga t₁ omoi-dasu-no to Mary-o₂ Taro-ga t₂
 I-ACC T.-NOM think-extract-NML and M.-ACC T.-NOM
 omoi-dasa-nai-no-ga hituyou da.
 think-extract-NEG-NML-NOM necessary COP
 ‘It is necessary that Taro remembers me and he does not recall Mary.’
- b. *Boku-o₁ Taro-ga t₁ omoi-dasu-no to Mary-o₂ ~~Taro-ga t₂~~
 I-ACC T.-NOM think-extract-NML and M.-ACC T.-NOM
 omoi-dasa-nai-no-ga hituyou da.
 think-extract-NEG-NML-NOM necessary COP
 ‘It is necessary that Taro remembers me and he does not recall Mary.’

Second, extraction of adjuncts from VVCE is also banned, as (13) indicates. (13) prohibits extraction of the adjunct *murini* ‘forcibly’ from VVCE.

- (13) a. Zyozyoni₁ Taro-ga t₁ boku-o omoi-dasu-no to murini₂ Taro-ga t₂ boku-o
 gradually T.-NOM I-ACC think-extract-NML and forcibly T.-NOM I-ACC
 omoi-dasa-nai-no-ga zyuuyou da.
 think-extract-NEG-NML-NOM important COP
 ‘It is important that gradually, Taro recalls me and forcibly, he does not recall me.’
- b. *Zyozyoni₁ Taro-ga t₁ boku-o omoi-dasu-no to murini₂ ~~Taro-ga t₂~~ boku-o
 gradually T.-NOM I-ACC think-extract-NML and forcibly T.-NOM I-ACC
 omoi-dasa-nai-no-ga zyuuyou da.
 think-extract-NEG-NML-NOM important COP
 ‘It is important that gradually, Taro recalls me and forcibly, he does not recall me.’

3.2. Long distance scrambling from VVCE

Next, long distance scrambling from VVCE is unavailable, as illustrated in (14). The NP *ano heya* ‘that room’ fails to undergo movement from VVCE in (14) (The V-V compounding verb *omoi-komu* ‘mistakenly.believe’, which takes CP complement, is used as a testing ground).

- (14) a. Sono heya-o₁ Mary-ga Taro-ga t₁ yogosita to omoi-kom-no to ano
 the room-ACC M.-NOM T.-NOM dirtied C think-contain-NML and that
 heya-o₂ Mary-ga Taro-ga t₂ yogosita to omoi-koma-nai-no-ga zyuyou
 room-ACC M.-NOM T.-NOM dirtied C think-contain-NEG-NML-NOM important
 da.
 COP
 ‘It is important that the room, Mary assumes that Taro dirtied and that room,
 Mary does not assume that Taro dirtied.’
- b. *Sono heya-o₁ Mary-ga Taro-ga t₁ yogosita to omoi-kom-no to ano
 the room-ACC M.-NOM T.-NOM dirtied C think-contain-NML and that
 heya-o₂ Mary-ga Taro-ga t₂ yogosita to omoi-koma-nai-no-ga
 room-ACC M.-NOM T.-NOM dirtied C think-contain-NEG-NML-NOM
 zyuyou da.
 important COP
 ‘It is important that the room, Mary assumes that Taro dirtied and that room, Mary
 does not assume that Taro dirtied.’

3.3. Raising to subject (passive and unaccusative)

Furthermore, raising to subject from the object position within VVCE to Spec TP is prohibited, as shown in (15) and (16). (15) is a passive sentence, which includes a passive morpheme *rare*. The unacceptability of (15-b) indicates that the derived subject *John* cannot move from VVCE.

- (15) a. Hanako-ga₁ Taro-ni t₁ omoi-dasa-reru-ka John-ga₂ Taro-ni t₂
 H.-NOM T.-DAT think-extract-PASS-OR J.-NOM T.-DAT
 omoi-dasa-re-nai-ka-ga hitsuyou da.
 think-extract-PASS-NEG-OR-NOM necessary COP
 ‘It is necessary that Hanako should be remembered by Taro or John should not be.’
- b. *Hanako-ga₁ Taro-ni t₁ omoi-dasa-reru-ka John-ga₂ Taro-ni t₂
 H.-NOM T.-DAT think-extract-PASS-OR J.-NOM T.-DAT
 omoi-dasa-re-nai-ka-ga hitsuyou da.
 think-extract-PASS-NEG-OR-NOM necessary COP
 ‘It is necessary that Hanako should be remembered by Taro or John should not be.’

The VP in (16) is headed by the unaccusative V-V compounding verb *moe-ochi* ‘burn out’ (Yumoto 2005). The NP *sono tekkinkonkuriito-no ie* ‘the steel reinforced concrete house’ base-generated in the object position cannot evacuate VVCE in (16).

- (16) a. Ano mokuzo-no ie-ga₁ hidoku t₁ moe-ochi-ta-no-to sono
 that wooden-GEN house- terribly burn-fall-PST-NML-and the
 tekkinkonkuriito-no ie-ga₂ hidoku t₂ moe-oti-nak-atta-no-wa
 steel.reinforced-concrete-GEN house-NOM terribly burn-fall-NEG-PST-NML-TOP
 yosoudori da.
 predictable COP
 'It is predictable that that wooden house burned down terribly and the steel
 reinforced concrete house did not.'
- b. *Ano mokuzo-no ie-ga₁ hidoku t₁ moe-ochi-ta-no-to sono
 that wooden-GEN house-NOM terribly burn-fall-PST-NML-and the
 tekkinkonkuriito-no ie-ga₂ hidoku t₂ moe-oti-nak-atta-no-wa
 steel.reinforced-concrete-GEN house-NOM terribly burn-fall-NEG-PST-NML-TOP
 yosoudori da.
 predictable COP
 'It is predictable that that wooden house burned down terribly and the steel rein-
 forced concrete house did not.'

3.4. Raising to spec TP from spec VP

Finally, subjects generated in Spec VP are also prevented from being extracted from VVCE, as in (17). The subject NP *Mary* in (17) cannot be overtly realized if VVCE occurs.

- (17) a. Taro-ga₁ t₁ suguni boku-o omoi-dasu-no-to Mary-ga₂ t₂ suguni boku-o
 T.-NOM soon I-ACC think-extract-NML-and Mary-NOM soon I-ACC
 omoi-dasa-nai-no-ga hitsuyou da.
 think-extract-NEG-NML-NOM necessary COP
 'It is necessary that Taro remembers me soon and Mary does not.'
- b. *Taro-ga₁ t₁ suguni boku-o omoi-dasu-no-to Mary-ga₂ t₂ suguni boku-o
 T.-NOM soon I-ACC think-extract-NML-and Mary-NOM soon I-ACC
 omoi-dasa-nai-no-ga hitsuyou da.
 think-extract-NEG-NML-NOM necessary COP
 'It is necessary that Taro remembers me soon and Mary does not.'

This section provides evidence regarding the unavailability of extraction from VVCE with respect to clause internal scrambling of objects and adjuncts, long distance scrambling, raising to subject, and raising to Spec TP from Spec VP. The immobility of elements from VVCE is unexpected by VSVPE approach to VVCE because VP ellipsis in general allows extraction from itself. The next section turns to why extraction from VVCE is disallowed and shows that ATB movement approach to VVCE correctly answers it.

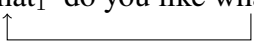
4. Analysis: ATB Movement and featural identity of movement chains

Having argued against VSVPE approach to VVCE, the data challenging it is shown to be correctly captured by ATB movement approach, assuming featural identity of movement chains (Blümel 2017).

4.1. Theoretical foundations

Before proposing my analysis, this section lays out theoretical foundations on movement and chain formation adopted in this paper. Following Blümel (2017), I assume that a movement chain, which is created by minimal search, must comprise non-distinct members (i.e. they must be featurally identical, see also structural identity of copies in Chomsky (2021), Chomsky et al. (2023)).

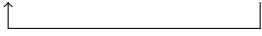
Consider the derivation of a sentence involving Wh movement, as illustrated in (18). (18-a) is derived by Wh movement of *what* from complement of the verb *like* in (18-b) to Spec CP in (18-c). The copies *what*₁ in Spec CP and *what*₂ in complement of *like* can form a movement chain, as in (18-d), because they are featurally non-distinct.

- (18) a. What do you like?
 b. do you like what?
 c. What₁ do you like what₂ ? (Wh movement)
 
 d. ⟨ what₁, what₂ ⟩ (formation of a chain ⟨ what₁, what₂ by (phase by phase) minimal search)

A derivation of ATB movement of a Wh phrase is given in (19).³ (19-a) involves ATB movement of *who* from complement of *see* and *ignore*, as (19-b) indicates. In (18-c), the Wh phrase *who*₂ base-generated in the object position of *like* moves to Spec CP (the Wh phrase is represented as *who*₃ in the position).⁴ Minimal search finds all the copies of *who*, which can create a movement chain because they are featurally identical, as in (19-d) (Blümel (2017) assumes that lower copies are disregarded by minimal search to form a movement chain as well as that process triggered by Agree. I follow this assumption, though it is not crucial to my analysis). I set up the basic foundations of my analysis, moving on to the analysis proposed in this paper in the next subsection.

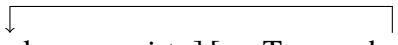
³ I omitted irrelevant details such as phase and its interaction with minimal search. Interested readers should refer to Blümel (2017).

⁴ The NP *who*₃ in complement of *ignore* can be moved to Spec CP as well. In that case, chain formation functions well. This is because minimal search works in the same way as stated in the following sentence, since copies are located in the same positions whether *who*₂ or *who*₃ moves to Spec CP. Thus, I omit the derivation of movement of *who*₃ to Spec CP for expository purposes.

- (19) a. Who did John see and he ignore?
 b. did John see who and he ignore who?
 c. who_1 did John see who_2 and he ignore who_3 ? (Wh movement of who_2 to who_1)

 d. $\langle \text{who}_1, \text{who}_2, \text{who}_3 \rangle$ (formation of a chain $\langle \text{who}_1, \text{who}_2, \text{who}_3 \rangle$ by (phase by phase) minimal search)

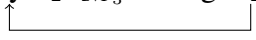
4.2. Analysis of VVCE

This subsection provides an analysis of the unavailability of movement from VVCE from the viewpoint of ATB movement and movement chain formation. First, ATB movement approach in tandem with theory of movement chain correctly rules in VVCE (repeated in (20)), as illustrated in (21). vP_2 moves to Spec CP in the matrix sentence. The copies of vP (vP_1 (= *Taro-ga boku-o omoi*), vP_2 (= *Taro-ga boku-o omoi*), vP_3 (= *Taro-ga boku-o omoi*)) are featurally non-distinct because the same elements consist of all the vPs .⁵ VVCE without extraction from itself respects the condition on a movement chain (traces are disregarded by minimal search as mentioned above).

- (20) a. Taro-ga boku-o omoi-dasu-ka boku-o omoi-dasa-nai-ka-wa doudemoii.
 T.-NOM I-ACC think-extract-or I-ACC think-extract-NEG-OR-TOP no.interest
 ‘It does not matter whether Taro recalls me or not.’
 b. Taro-ga boku-o omoi-dasu-ka ~~boku-o omoi~~-dasa-nai-ka-wa doudemoii.
 T.-NOM I-ACC think-extract-or I-ACC think-extract-NEG-OR-TOP no.interest
 ‘It does not matter whether Taro recalls me or not.’
- (21) a. 
 $[\text{vP}_1 \text{ Taro-ga boku-o omoi-t}_1] [\text{vP}_2 \text{ Taro-ga } \cancel{\text{boku-o omoi-t}_1}] \text{-dasu-}_1\text{-ka } [\text{vP}_3 \text{ Taro-ga } \cancel{\text{boku-o omoi-t}_2}] \text{-dasa}_2\text{-nai-ka-wa doudemoii.}$
 b. $\langle \text{vP}_1$ (= *Taro-ga boku-o omoi*), vP_2 (= *Taro-ga boku-o omoi*), vP_3 (= *Taro-ga boku-o omoi*) $\rangle$

However, movement from VVCE (repeated in (22)) violates the condition on a movement chain, which fails proper chain formation of vPs , as in (23). (23) illustrates that vP_1 (a higher copy created by movement of vP_2) and vP_2 (composed of *Boku-o Taro-ga omoi*) are not equal to vP_3 (= *Taro-ga omoi*) in terms of featural identity.

⁵ Subjects stay in Spec vP just for convenience.

- (22) a. Boku-o₁ Taro-ga t₁ omoi-dasu-no to Mary-o₂ Taro-ga t₂
 I-ACC T.-NOM think-extract-NML and M.-ACC T.-NOM
 omoi-dasa-nai-no-ga hituyou da.
 think-extract-NEG-NML-NOM necessary COP
 ‘It is necessary that Taro remembers me and he does not recall Mary.’
- b. *Boku-o₁ Taro-ga t₁ omoi-dasu-no to Mary-o₂ ~~Taro-ga t₂~~
 I-ACC T.-NOM think-extract-NML and M.-ACC T.-NOM
~~omoï-dasa-nai-no-ga~~ hituyou da.
 think-extract-NEG-NML-NOM necessary COP
 ‘It is necessary that Taro remembers me and he does not recall Mary.’
- (23) a. [_{VP₁} Boku-o₁ Taro-ga t₁ omoi] [_{VP₂} ~~Boku-o₁ Taro-ga t₁ omoi~~—t₃] -dasu₃-no-to
 Mary-o₂ [_{VP₃} ~~Taro-ga t₂ omoi~~—t₄] -dasa₄-nai-no-ga hituyou da.

- b. ⟨ vP₁ (= Boku-o Taro-ga omoi), vP₂ (= Boku-o Taro-ga omoi), vP₃ (= Taro-ga omoi) ⟩

Note that this violation of featural identity can be circumvented by scrambling of the object *boku* ‘I’ in vP₂ to the matrix Spec CP before movement of vP₂, as in (24). This case does not cause any violation of the condition on a movement chain because the vPs consist of uniform members (*Taro-ga omoi*). However, the scrambling in (24) violates coordinate structure constraint because the movement occurs across disjunction marked by *ka* ‘or’⁶.

⁶ An anonymous reviewer correctly points out another possible derivation which have to be excluded. If the coordination itself can combine two larger identical constituents, that is to say, TP, and scrambling of *boku-o* ‘I-ACC’ and Mary-o ‘Mary-ACC’ can move to the edge of TPs, then it seems that CSC is not violated because nothing moves out of conjuncts, as shown in (i). This derivation respects featural identity of chains (⟨ vP₁ (= Taro-ga omoi), vP₂ (= Taro-ga omoi), vP₃ (= Taro-ga omoi) ⟩). However, a sentence created by the derivation sounds unacceptable, as shown in (i-a).

- (i) a. *Taro-ga omoi boku-o dasu-no-to Mary-o dasa-nai-no-ga hitsuyou da.
 T.-NOM think I-ACC extract-NML-and M.-ACC extract-NEG-NML-NOM necessary COP
 ‘It is necessary that Taro remembers me and he does not recall Mary.’
- b. [_{VP₁} Taro-ga t omoi] ... [&P [_{TP} boku-o₁ [_{VP₂} Taro-ga t₁ omoi]]...&...[_{TP} Mary-o₂ [_{VP₃} Taro-ga t₂ omoi]-dasa-nai-no-ga hituyou da]]]

I have no clear answers to your question. In the current analysis, the derivation is difficult to rule out. This fact may suggest that the sequence, A *ka* B *ka* ‘A or B’, is a compound and blocks insertion of *Mary-o* ‘Mary-ACC’ between *dasu-ka* ‘push-or’ and *dasa-nai-ka* ‘push-NEG-or’. Although it is significantly important to seek the possibility, I leave this issue for future research due to time and space limitations. Thanks to an anonymous reviewer for recalling my attention to the issue.

- (24) a.  Boku-o₁ [_{vP₁} Taro-ga t₁ omoi] Boku-o₁ [_{vP₂} ~~Taro-ga t₁ omoi-t₃~~]-dasu₃-no-to
Mary-o₂ [_{vP₃} ~~Taro-ga t₂ omoi-t₄~~]-dasa₄-nai-no-ga hituyou da.
- b. $\langle \text{vP}_1 (= \text{Taro-ga omoi}), \text{vP}_2 (= \text{Taro-ga omoi}), \text{vP}_3 (= \text{Taro-ga omoi}) \rangle$

Notice that the almost same kind of explanation is applied to all the cases where extraction from VVCE is unavailable because the extraction targets elements base-generated within vP and vP undergoes movement in ATB fashion in this approach. Thus, the current analysis correctly describes why extraction from VVCE is impossible, which is mysterious under VSVPE approach to VVCE. In addition, extraction from VVCE would be available if Japanese owns VSVPE (as well as ATB movement), which confirms the view that VSVPE does not exist in Japanese.

5. Consequence

The previous section discusses the immobility of elements from VVCE and supports ATB movement approach to VVCE rather than VSVPE. This section explores some consequences of the current analysis for ellipsis of adjunct and ban of extraction from a lower copy created by ATB movement in Japanese.

5.1. Adjunct ellipsis in Japanese

This subsection argues for adjunct ellipsis approach to adjunct inclusive reading (Oku 2016; Tanabe & Kobayashi 2024) instead of VSVPE (Funakoshi 2016). It is in general difficult to elide adjuncts in Japanese (Oku 1998). Nevertheless, contexts permit some native speakers to include the adjunct in a gap, as in (25).⁷ (25-b) is acceptable (at least in Funakoshi (2016)) because the adjunct *teineini* ‘carefully’ is contained in the gap and meaning that Hanako washed a car but she did not do so carefully (adjunct inclusive (AI) reading), which is compatible with the following sentence presupposing Hanako washed a car. On the other hand, the version of (25-b) with the object stranded, (25-c), contradicts the following sentence because (25-c)’s interpretation (Hanako did not wash a car (at all)) excludes the adjunct.

⁷ Tanaka (2023) reports that the majority of native speakers disagree with the judgement of (25) submitted by Funakoshi (2016). The judgement is not so clear to the author as well, a native speaker of Japanese. This subsection focuses on the speakers who share the judgment with Funakoshi (2016). I leave it for future study why the variations occur concerning the judgment (interested readers should refer to Tanaka (2023), Tanabe & Kobayashi (2024) for further details).

- (25) Context: Taroo and Hanako washed their parents' cars to get allowance. Taroo was thorough in his work while Hanako was not.
- a. Taro-wa teineini kuruma-o arat-ta.
T.-TOP carefully car-ACC wash-PST
'Taro washed a car carefully.'
 - b. Hanako-wa [_{VP} Δ] arawa-nak-atta. Hanako-ga arat-ta ato-no kuruma-wa
H.-TOP wash-NEG.PST. H.-NOM wash-PST after-GEN car-TOP
kitanak-atta.
dirty-PST
'Hanako didn't wash a car carefully. The car that Hanako washed was dirty.'
 - c. #Hanako-wa kuruma-o arawa-nak-atta. Hanako-ga arat-ta ato-no
H.-TOP car wash-NEG.PST. H.-NOM wash-PST after-GEN
kuruma-wa kitanak-atta.
car-TOP dirty-PST
'Hanako didn't wash a car carefully. The car that Hanako washed was dirty.'
- (Japanese; Funakoshi 2016:(119-120))

The availability of AI reading is claimed to show the existence of VSVPE in Japanese by (Funakoshi 2016) because VSVPE can elide adjuncts as well as objects, as in (26).

- (26) [_{TP} T-V₁ [_{VP} t₁-Obj adjunct]].

By contrast, Oku (2016) and Tanabe & Kobayashi (2024) argue against VSVPE approach to AI reading and proposes that adjuncts are elided alone in principle though their ellipsis is constrained by pragmatic factors. The current study indicates that VSVPE does not exist in Japanese, which supports the view that AI reading is allowed by adjunct ellipsis.⁸

5.2. Ban of extraction from lower copies created by ATB movement

This subsection points out that the condition on a movement chain also excludes extraction from lower copies created by ATB movement as well as movement from VVCE. VP fronting is allowed in Japanese if some particles such as *wa* 'TOP' is provided, as in (27).

- (27) [_{VP} Mary-o home]-wa₁ Taro-ga t₁ sita.
M.-ACC praise-TOP T.-NOM did
'Praise Mary, Taro did.'

(28) shows that ATB movement of VP fronting is also available.

- (28) [_{VP} Mary-o home]-wa₁ [_{&P} Taro-wa t₁ sita si Ziro-mo t₁ sita].
M.-ACC praise-TOP T.-TOP did and Z.-also did
'Praise Mary, Taro did and Ziro did.'

However, it is impossible to extract the object from vP in the (second) conjunct, as in (29). The NP *Mike* cannot be extracted from the vP in (29).

⁸ Refer to Oku (2016), Simpson (2023), Tanabe & Kobayashi (2024) for further details because they are irrelevant in this article.

- (29) *_{[VP Mary-o home]-wa₁ [_{&P} Taro-wa t₁ sita si Ziro-mo Mike-o₂ t₁ sita].}
- M.-ACC praise-TOP T.-TOP did and Z.-also M-ACC did
- ‘Praise Mary, Taro did and Ziro also did Mike.’

This can be explained by featural identity of chain members, as (30) indicates. The copies of VP, VP₁, VP₂, and VP₃, are featurally non-identical because VP₁ (=VP₂, Mary-o home-wa) is not equal to VP₃ (home-wa).

- (30) a. *_{[VP₁ Mary-o home]-wa₁ [_{&P} Taro-wa [_{VP₂ ~~Mary-o home~~]-wa sita si Ziro-mo Mike-o₂ [_{VP₃ t₂ ~~home~~]-wa sita].}}}
- b. 〈 VP₁ (= Mary-o home-wa), VP₂ (= Mary-o home-wa), VP₃ (= home-wa) 〉

Some consequences are explored in this subsection. Adjunct ellipsis approach to AI reading is supported. The unacceptability of extraction from VP in a conjunct undergoing ATB movement is also provided with an explanation by featural identity of movement chain.

6. Conclusion

This paper claims that VSVPE does not exist in Japanese by investigating the availability of extraction from verb-verb compounding ellipsis (VVCE). It is shown that movement from VVCE is prohibited by focusing on clause internal scrambling, long distance scrambling, raising to subject, and raising to Spec TP from Spec VP though VP ellipsis allows extraction from itself. The impossibility of movement from VVCE is explained by ATB movement in tandem with featural identity of movement chain formalized by Blümel (2017), which confirms that Japanese lacks VSVPE. As a consequence, the current analysis argues for adjunct ellipsis approach to AI reading and correctly prohibits extraction from VP which undergoes ATB movement in Japanese.

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Abbreviations

ACC	accusative	NOM	nominative
DAT	dative	PST	past
NML	nominalizer	NEG	negation
TOP	topic	COP	copula
PASS	passive		

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Split or unified: revisit the structure(s) and reading(s) of Mandarin Chinese classifier phrases

Jiajia Wang

Mandarin Chinese is a classifier language. Li (2011) proposes two equally accessible readings — counting and measure — for container classifier phrases, which I term the *Split Hypothesis* (see also Rothstein, 2017). However, I present novel data that challenges this syntactically originated distinction and the validity of a counting reading for container classifiers. I then extend Brody & Feiman’s (2024) proposal of polysemy to capture the interpretation nuances of classifier phrases, and argue instead for a *unified* reading, wherein other inferences are contextually modulated. ·

1. Introduction

Mandarin Chinese, unlike English, is a *classifier language*. A classifier is almost always required when a numeral modifies a noun, irrespective of whether the noun is perceptually count or mass.¹ Typical examples include the general individual classifier *ge* in (1) and the container classifier *wan* ‘bowl’ in (2).

- (1) san ge ren
 three CL_{general} person
 ‘three people’
- (2) san wan shui
 three CL_{bowl} water
 ‘three bowls of water’

Cheng & Sybesma (1998, 1999, 2005) distinguish Mandarin Chinese classifiers into two categories: *count-classifiers*, which simply *name* the natural measure unit of the noun’s referent,

¹ In Mandarin Chinese, classifiers are used with nearly all nouns when combined with numerals, with very few exceptions such as *san tian* ‘three days’, where classifiers are absent and disallowed.

and *mass-classifiers*, which *create* a countable unit of measure for the denotation of the noun. Individual classifiers, such as *ge* in (1), fall into the first category, while container classifiers, as shown in (2), belong to the second. This paper concentrates on these two representative categories, with a primary focus on container classifiers.

Despite extensive research on the syntax of classifier phrases², there remains debate about their structural representation. Some argue for a left-branching structure (Krifka 1995, assumed for his semantic study; Her 2017; Her & Tsai 2020; Tan 2024), while others advocate a right-branching configuration (Cheng & Sybesma 1999; Li 1999; Huang et al. 2009). These differing views are collectively referred to in this paper as the *Unified Hypothesis*, suggesting that multiple interpretations of classifier phrases, if any, do not arise from the syntactic level.

In contrast, another line of research, termed here as the *Split Hypothesis*, proposes that each syntactic structure corresponds to a distinct reading (Li 2011; Li 2014; Rothstein 2017; Jin 2018; Jiang et al. 2022). In other words, this hypothesis posits that the divergence begins at the syntactic level. Therefore, I will re-examine the syntactic arguments for the Split Hypothesis proposed in Li (2011), briefly previewed as follows.

- (3)
 - a. The ‘Cl + N’ construction, as in *ping_{cl} jiu_n* ‘a bottle of wine’, is only allowed in counting contexts³;
 - b. The reduplication of classifier ‘Cl + Cl’ construction, as in *ping_{cl} ping_{cl}* ‘bottles’, only occurs in counting contexts;
 - c. The addition of *duo* ‘more’ after a classifier is banned in counting contexts;
 - d. The insertion of pre-classifier adjectives imposes a counting reading;
 - e. The addition of post-classifier *de* forces a measure reading.

My first aim is to demonstrate that Li’s (2011) arguments, endorsed by Rothstein (2017), are insufficient for supporting the Split Hypothesis in Mandarin Chinese. However, note that a lack of supporting evidence does not necessarily invalidate the Split Hypothesis, nor does it automatically justify the Unified Hypothesis.

Apart from the highly investigated syntactic structures, the reading(s) of classifier phrases have so far received much less attention. One of the most systematic and influential proposals is that of Li (2011) and Rothstein (2017), who posit two distinct readings: *counting* and *measure*. Notably, this distinction is argued to stem from syntax, in line with the Split Hypothesis. Specifically, a classifier first combines with a noun for a counting reading, while with a numeral for a measure reading. Semantically, a counting reading necessitates the existence of individuals (or atoms⁴), while a measure reading concerns only the overall quantity of the noun’s referent. The distinction between counting and measure readings is exemplified by the typical examples (4) and (5).

² The term ‘classifier phrases’ used in this paper does not presuppose any specific syntactic structure. It simply serves as an abbreviation for phrases containing a classifier, whether the complete ‘numeral + classifier + noun’ sequence (the typical pattern in Modern Mandarin) or any truncated and derived variants.

³ ‘Counting contexts’ require the existence of containers, whereas in ‘measure contexts’ the containers are irrelevant and only the overall quantity of the contents matters (Li 2011). Examples (4) and (5) illustrate the difference.

⁴ Note that I use the notion of ‘atom’ loosely here. I do not presuppose absolute atoms, as defined in Chierchia’s (1998) domain for nouns, nor do I presuppose semantic atoms, as established through context (Rothstein 2017).

- (4) wo lin le liang ping jiu, zuoshou yi ping, youshou yi ping.
 I carry PFV two CL_{bottle} wine left.hand one CL_{bottle} right.hand one CL_{bottle}
 ‘I carried two bottles of wine, one in the left hand and the other in the right hand.’
 (Counting; Li 2011:(112))
- (5) ta-de jiuliang shi liang ping hongjiu.
 his drinking.capacity be two CL_{bottle} red.wine
 ‘His drinking capacity is two bottles of red wine.’
 (Measure; Li 2011:(112))

In (4), the classifier phrase is claimed to have a counting reading, which requires the presence of individualised entities — in this case, the two physical bottles containing wine. This allows the predicate *lin* ‘carry’ to operate on the containers denoted by the classifier *ping* ‘bottle’. For future reference, a context where the existence of the containers is relevant, such as the context in which (4) is true, is called *a counting context*. Differently, the context for (5) is about drinking capacity, where the containers are irrelevant, and the focus is instead on the overall quantity of the contents. This context is thus referred to as *a measure context* hereafter. In this case, the predicate *shi* ‘be’ clearly applies to the contents *hongjiu* ‘red wine’, rather than the containers as in the counting context.

Li (2011) uses a container classifier in both examples because, as he claims, container classifiers can freely access both readings. My second goal in this paper, therefore, is to present counterexamples where native speakers are reluctant to derive a counting reading even in a forced counting context, contrary to this claim. This empirical evidence suggests that a counting reading for container classifiers may be specious.

Building on that, I will extend the proposal about polysemy in Brody & Feiman (2024) to classifier phrases. According to it, it is problematic to propose multiple lexical representations, such as LUNCH_{meal} and LUNCH_{event}, for a co-predicating sentence like *Lunch was delicious and lasted for hours*. I will argue that the seemingly polysemous nature of container classifier phrases is, in fact, illusory — similar to the case of simple nouns like *lunch*.

Following this introduction, I will challenge the syntactic arguments for the Split Hypothesis in Section 2. In Section 3, I will provide empirical counterexamples to the counting reading for container classifier phrases, and discuss the potential reasons for the perceived polysemy of classifier phrases. Finally, I will conclude in Section 4 and point out two directions for future research.

2. Split or unified structures?

Syntactically, the Split Hypothesis (Li 2011; Rothstein 2017) claims that Mandarin Chinese classifier phrases have two distinct structures. In a counting reading, which presupposes the existence of atoms, the classifier forms a constituent with the nominal phrase first before merging with the numeral as a whole (see Figure 1a on the next page). In a measure reading, focusing on the overall quantity, the classifier combines with the numeral and then with the noun (see Figure 1b on the next page). Note that I, like the Split Hypothesis, am primarily concerned with the issue of constituency. Specifically, whether a classifier is combined with a noun first or with a numeral matters. Since constituency is logically independent of syntactic labels in trees, I simplified the trees as presented below and will remain neutral on this issue.

(a) Counting

```

graph TD
    Root1[ ] --- Node1[ ]
    Root1 --- Minus1[-]
    Node1 --- Numeral[numeral]
    Node1 --- Node2[ ]
    Numeral --- Classifier[classifier]
    Numeral --- Noun1[noun]
  
```

(b) Measure

```

graph TD
    Root2[ ] --- Minus2[-]
    Root2 --- Noun[noun]
    Minus2 --- Node3[ ]
    Node3 --- Numeral[numeral]
    Node3 --- Classifier[classifier]
  
```

Figure 1. Proposed syntactic representations for counting and measure readings

The first argument made by Li (2011) concerns the ‘Cl + N’ construction, which lacks a numeral and only occurs in a postverbal position. According to Li (2011), this structure must have a counting reading, as the absence of a numeral necessitates that the classifier directly combines the nominal phrase, thereby conforming to the counting structure as shown in Figure 1a. He uses the examples in (6) for illustration.

- The sentence (6-a) is judged true in a counting context where the speaker bought a bottle which was filled with wine. In contrast, (6-b) is evaluated in a measure context. According to Li (2011), the truncated classifier phrase cannot exist in a measure context and have a measure reading, thus it is unacceptable.

(7) chushi jia le wan shui jin tang li.
 cook add PFV CL_{bowl} water in soup inside
 ‘The cook added one bowl of water into the soup.’
 (Measure)

- (10) ?ta-de jiuliang shi liang ping baijiu, ping ping dou shi yi
 her drinking.capacity be two CL_{bottle} white.liquor CL_{bottle} CL_{bottle} all be one
 gongjin na zhong.
 kilogram that kind
 ‘Her drinking capacity is two bottles of white liquor, each weighing one kilogram.’
 (Measure)

In this example, the first clause indicates that her drinking capacity is two bottles of white liquor, regardless of the actual containers. Even though the second clause with the reduplicated classifier specifies the overall quantity of the bottles, it does not require the existence of two specific bottles in the context. The truth condition can be satisfied as long as the amount of white liquor consumed is equivalent to two kilograms, consistent with the measure reading. Hence, the acceptance of the reduplication of classifier construction in measure suggests that it is not a reliable test for distinguishing counting and measure readings.

2.3. Duo ‘more’

Li (2011) observes that placing *duo* ‘more’ in different positions within the classifier phrase yields distinct readings. Specifically, when the structure is ‘Num + *duo* + Cl + N’ with a round numeral, both counting and measure readings are available, as in (11), whereas the ‘Num + Cl + *duo* + N’ construction is said to allow only the measure reading, and to prefer a numeral less than ten, as in (12-b).

- (11) a. ta lin le shi duo ping hongjiu.
 he carry PFV ten more CL_{bottle} red.wine
 ‘He carried more than ten bottles of red wine.’
 (Counting; Li 2011:(114))
- b. ta zhishao neng he-xia shi duo ping hongjiu.
 he at.least can drink-down ten more CL_{bottle} red.wine
 ‘He can at least drink more than ten bottles of red wine.’
 (Measure; Li 2011:(114))
- (12) a. #ta lin le shi ping duo hongjiu.
 he carry PFV ten CL_{bottle} more red.wine
 Intended: ‘He carried more than ten bottles of red wine.’
 (Counting; Li 2011:(114))
- b. ta jinwan zonggong he le san ping duo hongjiu.
 he tonight altogether drink PFV three CL_{bottle} more red.wine
 ‘Tonight, he drank more than three bottles of red wine.’
 (Measure; Li 2011:(114))

Firstly, it is unexpected that Li (2011) used *shi* ‘ten’ in (12-a), as the construction is reported to prefer numerals below ten. When I modified it as in (13) below, my consultants found it felicitous, meaning that he might carry four bottles with three full and one not. Consequently, the contrast Li presented does not hold.

- (13) ta lin le san ping duo hongjiu.
 he carry PFV three CL_{bottle} more red.wine
 ‘He carried more than three bottles of red wine.’

(Counting)

Secondly, there is no need to have two structures to capture the different interpretations regarding quantity. To clarify, the difference caused by the addition of *duo* ‘more’ in distinct positions is not related to the counting/measure distinction, as established in the first point. Instead, the nuance is that the classifier phrase in (11-a) indicates that the number of bottles is greater than ten but up to nineteen, whereas the classifier phrase in (12-a), assuming it is acceptable, means that the quantity is slightly more than what ten full bottles would contain but less than eleven. Importantly, such a difference remains even if a unified structure is assumed.

Suppose a unified right-branching structure, as in Figure 1b. To achieve the greater-than-ten-but-less-than-twenty interpretation, *duo* first merges with the numeral *shi* ‘ten’, modifying the numeral. Then, they combine with the classifier and, subsequently, the noun. In contrast, to get the greater-than-ten-but-less-than-eleven understanding, the numeral first forms a constituent with the classifier. Then, *duo* modifies them together, and finally, they merge with the noun. In summary, this is not a convincing argument for the split view.

2.4. Pre-classifier adjectives

Li (2011) claims that the addition of pre-classifier adjectives restricts the reading to a counting one, as the structure [Num + [Adj + [Cl + N]]] forces a classifier to combine with the noun first. Consequently, pre-classifier adjectives are disallowed in the measure context, as in (14).

- (14) #ta-de jiuliang shi yi da ping futejia.
 her drinking.capacity be one big CL_{bottle} Vodka
 Intended: ‘Her drinking capacity is one big bottle of Vodka.’

(Measure; Li 2011:(156))

However, I, along with the consultants, observed that this construction actually survives in Li’s (2011) and Rothstein’s (2017) measure contexts, as shown in (15) and (16) respectively, given a change in the adjective in (14).

- (15) ta-de jiuliang shi yi zheng ping futejia.
 her drinking.capacity be one whole CL_{bottle} Vodka
 ‘Her drinking capacity is one whole bottle of Vodka.’

(Measure)

- (16) chushi jia le san man/xiao/da wan shui jin tang li.
 cook add PFV three whole/small/big CL_{bowl} water in soup inside
 ‘The cook added three whole/small/big bowls of water into the soup.’

(Measure)

Additionally, by searching the Lancaster Corpus of Mandarin Chinese (McEnery & Xiao 2004), I observed two instances which also challenge the claim. According to Li (2011), a menu-like context serves as a measure context, where even individual classifier phrases, which have

a strong tendency towards a counting interpretation, can adopt a measure reading. Thus, the following menu-like examples, as presented in (17) and (18), are excellent counterexamples.

- (17) fang yi xiao shi xiaosuda, shao-fei ji fenzhong, shuigou ji
 put one small CL_{spoon} baking.soda heat-boil several minute scale promptly
 chu.
 remove
 ‘Add a small spoonful of baking soda, boil for a few minutes, and the scale will be removed.’

(Measure)

- (18) wei fangzhi shui bianzhi, ke zai shuigang zhong jia jin yi xiao kuai
 for prevent water go.bad can at water.tank inside add into one small CL_{piece}
 mutan.
 charcoal
 ‘To prevent water from going bad, a small piece of charcoal can be added to the water tank.’

(Measure)

Consequently, the claim that the presence of pre-classifier adjectives enforces a counting reading due to the syntactic structure is untenable, and therefore provides little support for the Split Hypothesis.

2.5. Post-classifier *de*

Apart from adjectives, the addition of post-classifier *de* is claimed to force a measure reading with the structure [[[Num + Cl] + *de*] + N], and is prohibited in a counting reading, as it breaks the direct combination between the classifier and the noun. Li (2011) used the minimal pairs in (19) to support this claim.

- (19) a. (i) wo kai le san ping jiu.
 I open PFV three CL_{bottle} wine
 ‘I opened three bottles of wine.’
 (Counting; Li 2011:(188))
 (ii) #wo kai le san ping de jiu.
 I open PFV three CL_{bottle} DE wine
 Intended: ‘I opened three bottles of wine.’
 (Counting; Li 2011:(189))
 b. (i) wo-de wei neng zhuang-xia san ping jiu.
 my stomach can hold three CL_{bottle} wine
 ‘My stomach can hold three bottles of wine.’
 (Measure; Li 2011:(188))
 (ii) wo-de wei neng zhuang-xia san ping de jiu.
 my stomach can hold three CL_{bottle} DE wine
 ‘My stomach can hold three bottles of wine.’
 (Measure; Li 2011:(189))

The first doubt is why a new measure context has been chosen to illustrate this point. Revisiting his typical measure context about drinking capacity, presented below as (20-a), and comparing it with its minimal pair (20-b), reveals issues.

- (20) a. ta-de jiuliang shi liang pinghongjiu.
 her drinking.capacity be two CL_{bottle} red.wine
 ‘Her drinking capacity is two bottles of red wine.’
 (Measure)
- b. #ta-de jiuliang shi liang ping de hongjiu.
 her drinking.capacity be two CL_{bottle} DE red.wine
 Intended: ‘Her drinking capacity is two bottles of red wine.’
 (Measure)

My consultants all judged the sentence (20-b) unacceptable and reported that (20-a) is the correct version, where *de* is absent. So, Li’s claim is challenged by the unacceptability of (20-b).

Additionally, counterexamples in counting contexts, as shown in (21), further undermine Li’s (2011) claim that the addition of *de* in counting contexts would result in infelicity.

- (21) a. ta tuoyun le wu xiang de shu, wei-le songgei nongcun de haizi-men.
 she check.in PFV five CL_{box} DE book for give countryside DE child-PL
 ‘She checked in five boxes of books to give to children in the countryside.’
 (Counting)
- b. zhi jian laoren zuoshou yi dai, youshou yi dai, lin le liang
 only see old.man left.hand one CL_{bag} right.hand one CL_{bag} carry PFV two
 koudai de pingguo dao xuexiao lai fengei haizi-men chi.
 CL_{bag} DE apple to school come distribute child-PL eat
 ‘I saw the old man with a bag in his left hand and a bag in his right hand, carrying two bags of apples to the school to share with the children.’
 (Counting)

In (21-a), a counting context such as checking in luggage requires counting the exact number of boxes containing books. The acceptability of (21-a) casts doubts on Li’s (2011) claim. Moreover, the first two phrases in (21-b) limit the container classifier phrase to a counting reading, as in Li’s (2011) example (4), but again the grammaticality contradicts the claim.

To sum up, the argument that the addition of post-classifier *de* leads to a measure reading and blocks a counting reading is questionable. Therefore, it cannot serve as a compelling argument for the Split Hypothesis.

2.6. Interim conclusion

The Split Hypothesis, as proposed by Li (2011) and Rothstein (2017), assumes that classifier phrases in Mandarin Chinese have two distinct structures, each associated with one reading — either counting or measure. However, the syntactic arguments in Li’s (2011) dissertation were all challenged above, including the restriction of ‘Cl + N’ and the reduplicated classifier constructions to counting contexts, as well as the limited distribution of *duo* ‘more’, pre-classifier adjectives and post-classifier *de*.

As a result, there are no convincing arguments in favour of the split view at this point. However, strong evidence is still required to overturn this hypothesis completely. Therefore, I cannot draw any definitive conclusion regarding the Split and Unified Hypotheses. Setting aside the unresolved syntactic structure for now, I will proceed to discuss their claims about the two distinct readings.

3. Split or unified readings?

Recall that Li (2011) and Rothstein (2017) propose two distinct readings for classifier phrases, i.e., *counting* and *measure*, derived from syntactic differences. They both reported that container classifier phrases display these two readings.⁷ This idea is not new; in the early framework of Cheng & Sybesma (1998), container classifiers are categorised as *mass-classifiers* that create countable units, and Cheng (2012) further identifies two functions of container classifiers: individuation and measurement. To better present the two potential readings, I will focus on container classifier phrases.

Specifically, a counting reading requires the presence of individualised entities. For instance, in (22-a), the classifier phrase demands two real bottles filled with wine. In contrast, a measure reading pertains solely to the overall quantity of the noun's referent, as in (23-a). To clarify this difference, Li's (2011) semantic representations of the container classifier phrases in different contexts are presented in (22-b) and (23-b), respectively.

(22) *Counting*

- a. wo lin le liang ping jiu, zuoshou yi ping, youshou yi ping.
 I carry PFV two CL_{bottle} wine left.hand one CL_{bottle} right.hand one CL_{bottle}
 'I carried two bottles of wine, one in the left hand and the other in the right hand.'
 (Li 2011:(112))
- b. $\llbracket \text{liang ping jiu} \rrbracket = \lambda x. \pi_1(x) \in {}^*(\text{bottle} \cap k) \wedge \text{CONTAIN}(\pi_1(x), {}^\cap \text{wine}) \wedge |\pi_1(x)|_k = 2 \wedge \pi_2(x) = k$
 (cf. Li 2011:(149))

(23) *Measure*

- a. ta-de jiuliang shi liang ping hongjiu.
 her drinking.capacity be two CL_{bottle} red.wine
 'Her drinking capacity is two bottles of red wine.'
 (Li 2011:(112))
- b. $\llbracket \text{liang ping hongjiu} \rrbracket = \lambda x. x \in {}^\cup \cap \text{red.wine} \wedge \text{bottle-FUL}(x) = 2$
 (cf. Li 2011:(151))

Li (2011) assumes that all Mandarin nouns are kind-denoting mass nouns (Chierchia 1998), functioning as arguments and accompanied by a ${}^\cap$ -operator. Additionally, he assumes k as the context, and the atoms are formed through the intersection of the nominal element and the context k . He adopts the assumption in Rothstein (2010) that a singular count noun is a set of

⁷ For individual classifiers, the counting reading is generally the default; for measure words like *sheng* 'litre' and *mi* 'metre', the measure reading is naturally assumed. Li (2011) claims that only a very limited set of contexts allows for a shift between readings. For example, in a menu context, individual classifier phrases such as *yi ge pingguo* 'one apple' may be interpreted with a measure reading.

ordered pairs, where the first projection of the ordered pairs $\pi_1(x)$ is the individualised entities, and the second projection $\pi_2(x)$ represents the context k . Furthermore, he incorporates Link's (1983) *-operator to pluralise the semantic atom.

In (22-b), it is noticeable that the nominal container classifier *ping* 'bottle' becomes contextual atoms, with the variable x ranging over them. It is also clear that in the counting context, the predicate *lin* 'carry' will target the containers *ping* 'bottle', emphasising the cardinality of the containers rather than that of the contents *jiu* 'wine'. Thus, the counting reading requires the existence of containers matching the numeral in number, and those containers are the predicate's target. In contrast, in (23-b), no atoms are established, and the copula *shi* 'be' will operate on the contents *hongjiu* 'red wine', focusing on its quantity, not the containers.

These two distinct readings are claimed to be observed cross-linguistically, for example, in English (Landman 2004; Rothstein 2010), Modern Hebrew, Russian, Quebec French, and Hungarian (Rothstein 2017). Li (2011) extends this idea to Mandarin Chinese. However, I will demonstrate that container classifier phrases in Mandarin Chinese are devoid of a counting reading.

3.1. Empirical challenge towards the counting reading of container classifiers

Recall that container classifiers are said to have access to both readings, with the counting reading demanding atomic containers' presence. To test the availability of a definitive counting reading as defined by Li (2011), I constructed examples aiming to induce such a reading. The first example (24) was judged infelicitous out of blue by four out of five consultants⁸.

(24) ??wo dasui le san wan shui.

I smash PFV three CL_{bowl} water

Intended: 'I smashed three bowls of water.'

(Intended: counting)

Those who found it odd often questioned, 'You cannot smash water, right?' For these consultants, the predicate targets the contents *shui* 'water', rather than the containers *wan* 'bowl', despite the alleged availability of a counting reading for container classifiers. Critics might argue that some individuals accept this sentence, as evidenced by the one consultant from my group.

To further consolidate the argument, a more robust example is needed. Note that the contents mentioned by Rothstein (2017) and Li (2011) are quite common in our daily lives, e.g. water and wine. This frequent exposure might create a strong association between the contents (the noun) and its typical container(s) (the container classifier); thus, potentially, it could obscure the true target of the predicate. Specifically, when we intend for the predicate to aim at the container(s) denoted by the classifier to elicit a counting reading, it is likely that the predicate is actually targeting the contents, but due to the strong tie between the contents and the container(s), it seems superficially that the predicate is linked with the container(s) rather than the contents. Consequently, this could lead to the erroneous conclusion that a counting reading exists.

⁸ Possible factors for the different judgements include geographical and/or dialect variation. The four consultants who judged this example as infelicitous are all from the southern part of China, whereas the one who considered it acceptable is from the northern part of China.

Following this logic, to truly induce a counting reading as defined by Li (2011) and Rothstein (2017), the sentence should include (i) a predicate that exclusively applies to the container(s), and (ii) contents that do not typically have an associated container. Therefore, I identified the verb *paoguang* ‘polish’ and the noun *zhengqi* ‘steam’ as suitable candidates, as shown in (25).

- (25) #wo paoguang le san guan zhengqi.
 I polish PFV three CL_{jar} steam
 Intended: ‘I polished three jars of steam.’

(Intended: counting)

All consultants deemed this infelicitous, noting that ‘We cannot polish steam.’ Thus, there remains no explanation for why the predicate cannot apply to the containers, even under coercion.

However, some may argue that this unacceptability can stem from the uncommon combination of the container and the contents, as storing steam is not normal. While this oddity was intentional, I acknowledge that this is a valid point. So, a more common, though still not overly familiar, scenario is presented in (26); yet even in this case, the sentence remains infelicitous.

- (26) #wo shao-guang le san mu xiang bolizhu.
 I burn PFV three wooden CL_{box} glass.bead
 Intended: ‘I burned three wooden boxes of glass beads.’

(Intended: counting)

To satisfy the truth condition of (26) requires the speaker to burn all the glass beads or both glass beads and the three wooden boxes. But note that in an ordinary burning process, glass beads will not be burnt at all, so the wooden boxes denoted by the container classifier are the only flammable items. As we have seen, even in this strong counting context, the sentence is still judged unacceptable.

Finally, I return to the counting examples in Li (2011) and Rothstein (2017), presented here as (27) and (28). Arguably, the truth conditions of these two sentences could be satisfied as long as the water and the juice have been carried, indicating that the predicates operate on the contents as in the measure readings, not the containers. Though it is possible to force the existence of the containers as the last two phrases do in (27), the main clause is vague about the containers. Thus, it cannot be determined with certainty whether the containers denoted by the classifier must exist in the context.

- (27) wo lin le liang ping jiu, zuoshou yi ping, youshou yi ping.
 I carry PFV two CL_{bottle} wine left.hand one CL_{bottle} right.hand one CL_{bottle}
 ‘I carried two bottles of wine, one in the left hand and the other in the right hand.’

(Counting; Li 2011:(112))

- (28) fuwuyuan duan-lai le san bei guozhi.
 waiter carry-come PFV three CL_{glass} juice
 ‘The waiter carried three glasses of juice.’

(Counting; Mandarin version of the example in Rothstein 2017:(3))

To sum up, we currently lack empirical evidence for a counting reading in container classifier phrases in Mandarin Chinese. Nevertheless, one might argue that the two ‘readings’ remain intuitively salient: what we physically carry are the containers, whereas what we drink is their contents. In the next section, I will discuss the potential source of such polysemy intuitions.

3.2. The source of ‘polysemous’ classifier phrases

When we mention multiple readings of a word or phrase, we deem it *polysemous*, i.e., having more than one lexical representation (Brody & Feiman 2024). But the core question is: what counts as polysemy? Here, I align with Brody & Feiman’s (2024) proposal that in some cases our intuitions of polysemy arise from failing to distinguish the identity of a concept or word from the cognitive content connected to it. Importantly, such intuitions do not ensure that the word or phrase is polysemous, possessing many lexical entries.⁹ An representative example is presented below.

(29) Lunch was delicious but lasted for hours. (Brody & Feiman 2024:(180))

In (29), *delicious* modifies the food of the lunch under discussion, whereas *lasted for hours* describes the lunch event. Should two lexical entries for *lunch* be proposed, one being LUNCH_{food} and another being LUNCH_{event}, in this co-predicating sentence? Such an approach appears counter-intuitive. This raises the question of why such polysemous intuitions arise. As detailed in Brody & Feiman (2024), the identity of a concept is often conflated with other cognitive content inferred from the context, whether this involves the food, the event, or related aspects. Therefore, it is preferable to assume that polysemy of the kind illustrated in this example does not exist.

Following this logic, it is reasonable to treat container classifier phrases in the same way, especially after I have demonstrated above that a counting reading is not empirically supported. Recall that container classifier phrases are considered ‘polysemous’ because a noun is used as a classifier, which itself can have a referent in other sentence, such as *wan* ‘bowl’ in (30).

(30) wo mai le san ge wan.
I buy PFV three CL_{general} bowl
‘I bought three bowls.’

This characteristic contributes to generating inferences and makes it easier for us to have polysemous intuitions toward container classifier phrases, as both the classifier and noun could be nominal. Nonetheless, although a container classifier phrase includes two nominal elements that can each denote entities in context, it should be treated as a single lexical unit, without positing two distinct lexical entries. Take *san ping jiu* ‘three bottles of wine’ as an example. There is no need to posit separate lexical entries SAN-PING-JIU_{bottle} and SAN-PING-JIU_{wine}; rather, a single lexical entry SAN-PING-JIU suffices, representing one concept with contextually inferred content. This conclusion is in line with the discussion in Section 3.1, where I have demonstrated that the so-called counting reading for container classifier phrases might be an illusion, as sentences with predicates that exclusively and unambiguously target the containers consistently result in infelicity. Therefore, there is no empirical motivation for proposing two lexical entries for container classifier phrases.

What about individual classifier phrases? These are claimed to have a default counting reading, with only the noun capable of denoting entities. However, ‘polysemous’ interpretations can still arise when using co-predication, as illustrated in (31).

⁹ In Brody & Feiman (2024), they used both empirical and psycholinguistic evidence to demonstrate that our polysemy intuitions do not guarantee multiple lexical entries, and it is the context which invite various inferences. Please refer to their paper for a detailed discussion.

- (31) tamen san ge ren da zhe haqian ju zai le jiaoshi li.
 they three CL_{general} person do PROG yawn gather at PFV classroom inside
 ‘The three people, yawning, gathered in the classroom.’

In this sentence, *da haqian* ‘yawn’ is a distributive predicate while *ju* ‘gather’ is a collective verb. Does this imply the existence of separate lexical entries SAN-GE-REN_{individual} and SAN-GE-REN_{group}? I would argue that there is no need to posit split lexical entries for *san ge ren* ‘three people’.

In summary, there is no empirical evidence to argue for the Split Hypothesis, which proposes two readings for container classifier phrases, and the counting/measure distinction for classifiers in general.

4. Conclusion and future work

This paper began by critically evaluating five syntactic arguments for the Split Hypothesis in Li’s (2011) dissertation, as endorsed by Rothstein (2017). It turned out that both constructions — ‘Cl + N’ and reduplicated classifiers — were found in the contexts where such structures were claimed to be disallowed. Furthermore, the differing interpretations arising from the addition of *duo* in distinct positions were shown to lack a direct connection to the classifier structure. Lastly, the addition of pre-classifier adjectives and post-classifier *de* was demonstrated not to block one of the two readings, as claimed. Therefore, this paper concludes that there is currently no convincing syntactic evidence for the Split Hypothesis.

In light of the proposed split semantic interpretations, this paper presented counterexamples demonstrating that a definitive counting reading may not exist. Even in coerced counting contexts where predicates exclusively and unambiguously target the containers denoted by the classifier, such sentences are infelicitous. Consequently, there is no empirical support for the counting/measure distinction. Building on that, I extended Brody & Feiman’s (2024) discussion on polysemy to classifier phrases, indicating that polysemy intuitions regarding container classifier phrases stem from confusion about the concept and potential denotations of both the classifier and noun.

It is important to clarify that this study does not aim to generalise the findings to all classifier languages but focus specifically on Mandarin Chinese. In this paper, I did *not* conclude that the Split Hypothesis is wrong, nor did I claim that the Unified Hypothesis is automatically correct. What I hope to *have* shown is that advocating for the Split Hypothesis, whether syntactic or semantic, requires new and strong evidence.

Note that, as the empirical discussion here relies on a relatively small and geographically unbalanced set of speaker judgments, the counterevidence presented should be viewed as provisional. I therefore acknowledge this methodological limitation and leave it to future research to test these observations against larger and more diverse speaker samples or corpus-based data. Moreover, pursuing pragmatic explanations for polysemy intuitions remains a promising direction for further investigation.

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This paper is dedicated to my dearest friend, Qiantai Huang, who has left me physically but will remain with me in spirit forever.

Abbreviations

Adj	adjective	Num	numeral
CL/CI	classifier	PFV	perfective
DE	prenominal modifier marker	PROG	progressive
N	noun		

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Only a head-raising derivation for Japanese gap relatives

Takato Yamamoto

In the literature, the three kinds of derivations have been proposed for Japanese relative clauses (see Miyamoto 2017). However, because some of the empirical evidence that these derivations depend on is acceptable for some people but ungrammatical for others, it is controversial which analysis is correct. This paper aims to argue that Japanese relative clauses must be derived by an overt movement of a relativized head by presenting previously unnoticed data on Japanese relative clauses. This study also provides an analysis based on Form Copy suggested by Chomsky (2021) to explain the empirical facts reviewed in this paper.

1. Introduction

In Japanese, there are two kinds of relative clauses: a relative clause (RC) with a relativized head (RH) outside the clause (e.g. (1a)) and a RC whose RH is inside the clause (e.g. (1b)):

- (1) a. Mai-ga [[_{RC} Jun-ga e₁ katta] purin₁]-o tabeta.
Mai-NOM Jun-NOM bought pudding-ACC ate
'Mai ate the pudding that Jun bought.'
- b. Mai-ga [[_{RC} Jun-ga purin-o katta] no]-o tabeta.
Mai-NOM Jun-NOM pudding-ACC bought] NO-ACC ate
Lit. 'Mai ate the pudding that Jun bought.'

Since the RC in (1a) has the RH *purin* 'pudding' outside the clause, it is called the head-external RC. On the other hand, the corresponding RH in (1b) is located in a position within the clause. Such a RC is known as the head-internal RC. Although both kinds of RCs are intriguing to pursue, this presentation focuses on a derivation for the head-external RC and hereafter refers to this kind of RC as RC.

In the literature, three kinds of derivations have been proposed for head-external RCs (see Kizu 2005; Miyamoto 2017, among others): the head-raising analysis in (2a), the operator movement analysis in (2b), and the pro-binding analysis in (2c):

- (2) a. Head-raising analysis (e.g. Hoshi 2004; Kitao 2009; Morita 2013, among others)
{DP {TP ...t_{DP}...} {D' {CP DP {C' t_{TP} C}} D}}

- b. Operator movement analysis (e.g. Sakai 1994; Miyamoto 2017, among others)
 $\{_{DP} \{_{CP} Op \{_{C'} \dots t_{Op} \dots\} \} DP\}$ (Op = null operator)
- c. Pro-binding analysis (e.g. Kuno 1973; Murasugi 1991, 2000, among others)
 $\{_{DP} \{_{CP} \dots pro \dots\} DP\}$

Based on the analysis of Kayne (1994), Hoshi (2004) proposes the head-raising analysis in (2a), where the RH originates in the RC and moves to the edge of the clause, followed by the remnant movement of the clause into DP-Spec. On the other hand, (2b) and (2c) are different from (2a) in that the RH is base-generated outside the RC. Sakai (1994) and Miyamoto (2017) argue for the operator movement analysis in (2b) and claim that a moved phrase within a RC is not a RH but rather a null operator. The significant difference between (2a) and (2b) involves the status of a RC: it is derived as a complement in (2a) while it is an adjunct attached to the RH in (2b). The pro-binding analysis in (2c) is similar to (2b) in that the RC is assumed to be adjoined to the RH. However, (2c) is different from even (2b) as well as (2a) in that nothing moves in the RC. The gap within the RC is occupied by the null pronoun, and it is bound by the RH outside the clause. The pro-binding analysis is proposed by Kuno (1973) and Murasugi (1991, 2000), among others.

These analyses are contingent on different kinds of data, and it is controversial which analysis is on the right track. This paper aims to demonstrate that Japanese head-external RCs must be derived by an overt movement of a RH, by providing brand-new data, which are built on the discoveries in Sakamoto (2019). Furthermore, I propose an alternative head-raising analysis that can capture the whole range of the dataset, based on Form Copy suggested by Chomsky (2021).

The flow of this study is as follows: Section 2 reviews the three kinds of derivations in (2) suggested by the previous studies. Section 3 outlines an asymmetry between overt and covert extraction out of a null argument, found by Sakamoto (2019), to prepare for discussing a novel observation, which shows that an RC is derived by an overt movement of a RH in Section 4. After Section 5 introduces the theoretical background, Section 6 proposes an alternative head-raising derivation and accounts for the whole data. Section 7 discusses variation among native speakers' judgements on reconstruction effects in RCs. Finally, Section 8 concludes this paper.

2. Reviewing previous studies

2.1. Head-raising analysis

This subsection discusses the evidence for head-raising analysis in (2a), repeated here:

- (3) Head-raising analysis (e.g. Hoshi 2004; Kitao 2009; Morita 2013, among others)
 $\{_{DP} \{_{TP} \dots t_{DP} \dots\} \{_{D'} \{_{CP} DP \{_{C'} t_{TP} C\} \} D\} \}$

One of the strongest arguments for this analysis is the availability of reconstruction effects. Specifically, the complex anaphor *zibun-zisin* 'self-self' in Japanese must receive its referential information from what c-commands it within the local domain, as shown in (4a). Nevertheless, as illustrated in (4b), when the RH that contains the anaphor is relativized from the object position in the RC, the anaphor can refer to the subject *Mai* in the RC (hence, number indices are used to express coreferential elements, but their use does not have any theoretical status):

- (4) a. Mai₁-wa [Jun₂-ga zibun-zisin*_{1/2}-no ronbun-o hometa to] itta.
 Mai-TOP Jun-NOM self-self-GEN paper-ACC praised C said
 Lit. ‘Mai₁ said that John₂ praised self’s*_{1/2} paper.’
- b. [[Mai₁-ga e₂ taipusita] [zibun-zisin₁-no ronbun]₂]
 Mai-NOM typed self-self-GEN paper
 Lit. ‘self₁’s paper that Mai₁ typed’

Under the assumption in Chomsky (1995) that a moved phrase leaves its copy in its original position, it is assumed that the relevant interpretation of the complex anaphor in (4b) is obtained by interpreting a copy of a RH within a RC (see Hoshi 2004; Kitao 2009, 2011; Morita 2013, and others). The schematic representation of (4b) is illustrated as (5) (strikethroughs represent a non-pronounced copy):

- (5) {_{DP} {_{TP} Mai-ga {~~_{DP} zibun-zisin-no ronbun~~} taipusita} {_{D'} {_{CP} {_{DP} zibun-zisin-no ronbun} {_{C'} ...}} } _D}}

The anaphor *zibun-zisin* ‘self-self’ in the lower copy of the RH, i.e. {_{DP} zibun-zisin-no ronbun}, is locally c-commanded by the subject *Mai* in the RC, which qualifies as its referential antecedent. The similar reconstruction effects on anaphor binding of the complex anaphors *kare/kanozoyo-zisin* ‘himself/herself’ are also observed in Ishii (1991), Kizu (2005), Kitao (2009, 2011), Miyamoto (2017), Hayashi (2022), and others.

Another kind of reconstruction effect relates to relativization from an idiom chunk. As (6a) shows, the idiom chunk *boketu-o horu* literally meaning ‘to dig graves’ has an idiomatic interpretation ‘to bring about the ruin’. Importantly, the idiomatic interpretation is retained when the noun part *boketu* ‘graves’ of the idiom chunk is relativized in (6b):

- (6) a. John-ga mizukara boketu-o hotta.
 John-NOM himself grave-ACC dug
 Lit. ‘John dug a grave by himself.’
 Idiom. ‘John brought about the ruin by himself.’
- b. Raibaru-wa [[John-ga mizukara e₁ hotta] boketu₁]-o yorokonda.
 rival-TOP John-NOM himself dug grave-ACC happy
 Lit. ‘The rival was happy about the grave John himself dug.’
 Idiom. ‘The ruin John himself brought about made his rival happy.’
 (Kitao 2011:319, slightly modified)

Note that the noun *boketu* ‘graves’ cannot be idiomatically interpreted without the verb *horu* ‘to dig’ as represented in (7):

- (7) John-wa mizukara boketu-o tukutta.
 John-TOP himself grave-ACC made
 ‘John made (his) grave by himself./ *John made the ruin by himself.’ (Kitao 2009:33)

Given that parts of an idiom chunk must be properly associated to produce an idiomatic interpretation, the possibility of relativization from an idiom chunk, exemplified by (6b), can

also be captured if the relativized part of the idiom chunk originates at the RC and moves to the surface position by leaving its copy in the base position, as schematized in (8):

- (8) {DP {TP ... ~~boketu~~ hotta ...} {D' {CP {DP boketu} {C' ...}} D}

Additionally, that a RH in Japanese RCs is sensitive to an island domain is a piece of supporting evidence for the head-raising analysis in (3). For example, when the gap associated with a RH is located within another embedded relative clause, what would be produced becomes ungrammatical:¹

- (9) ??[_{RC} [[_{RC} sono gakusya-ga e₁ e₂ okutta] syoten₁]-ga yaketa] hon₂
 that scholar-NOM sent bookstore-NOM burned book
 ‘the book₁ [_{RC} that the bookstore₂ [_{RC} that that scholar sent e₁ e₂] burned down]]’
 (Inoue 1976:179)

Under the presumption that a movement from inside an island domain is prohibited, the ungrammaticality of (9) shows that something moves from the gap position to somewhere outside the RC. For the head-raising analysis, what undergoes movement is regarded as a RH:

- (10) *{DP {TP ... {RC ... ~~hon~~ ... syoten} ...} {D' {CP {DP hon} {C' ...}} D}
- 

This section has introduced a series of supporting evidence for the head-raising analysis: anaphor binding in (4) and idiomatic interpretation in (6) obtains via reconstruction of RHs, which is fed by movement of RHs, while island sensitivity in (9) certifies that Japanese RCs involve movements. The next section turns to an evaluation of the operator movement analysis.

¹ Note that Ishii (1991) and Miyamoto (2017) give weakly degraded status (??) to the (apparent) island sensitivity of relativization, exemplified by (9), unlike Hoshi (2004). They argue that such a degraded status must be differentiated from the strong ungrammaticality (?*) of the subjacency effect, exemplified by (i) below, and follow Saito (1985) in claiming that what causes (9) to be ?? is the use of a (null) resumptive pronoun in an island domain.

- (i) ?*[Ano hon]-o₂ John-ga [[e₁ e₂ katta] hito₁]-ni aitagatteiru rasii.
 that book-ACC John-NOM bought person-DAT meet.want seem
 ‘It seems that John wants to meet the person who bought the book.’ (Saito 1985:285)

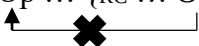
The SOLE reviewer asks how the relevant contrast is accommodated under my proposal that only a head-raising derivation is available for Japanese RCs. However, it is suspicious whether such a contrast truly exists. As Ishii (1991:90) and Miyamoto (2017:626, fn. 3) note, judgments of sentences with resumptive pronouns are not consistent among native speakers. In fact, at least for me, no significant grammatical contrast between relativization from an island domain like (9) and subjacency effect in (i) is detectable (see also Hoshi 2004, where it is reported that the data like (9) is judged as fully unacceptable (*)). Also, in other languages like Bosnian/Croatian/Serbian and Polish, the presence of resumptive pronouns does not affect the acceptability of relativization from an island domain at all (see Hladnik 2015:28–35). If the same is true for Japanese, it might be possible that, if any, the relevant contrast does not involve the use of resumptive pronouns. Moreover, if the contrast between (9) and (i) does exist, it does not mean that the data like (9) does not involve overt movement of RHs. As Boeckx (2003), Sichel (2014) and Hladnik (2015), among others, propose, resumptive pronouns can be realized in the raising structure. If the (null) resumptive pronoun occurs in (9), it might be the consequence of spelling out the lower copy/trace of the moved RH (see e.g. Kitao 2011 for resumption in a head-raising structure in Japanese RCs). In a nutshell, the relevant contrast is not necessarily problematic for my proposal, although I do not have a clear answer to what creates the contrastive judgement between relativization from an island (e.g. (9)) and subjacency effect in (i) for some Japanese native speakers (e.g. Ishii 1991; Miyamoto 2017). I leave the task of exploring the cause of the contrast in question for my future research.

2.2. Operator movement analysis

In this section, I will introduce the discussion made by advocates of the operator movement analysis, which is repeated in (11):

- (11) Operator movement analysis (e.g. Sakai 1994; Miyamoto 2017, among others)
 $\{DP \{CP \text{ Op } \{C' \dots \text{top} \dots\} \} DP\}$ (Op = null operator)

What is characteristic of the analysis in (11) is that the moved element is a null operator and that a RC is derived as an adjunct to a RH base-generated outside the clause. Since the null operator moves from a gap position to the edge of the RC, the operator movement analysis explains the island sensitivity of a RH in (9) (and in this respect, the data in (9) is not regarded as strong evidence for the head-raising analysis):

- (12) $*\{DP \{CP \text{ Op } \dots \{RC \dots \text{Op} \dots \text{syoten}\} \dots\} \{DP \text{ hon}\}\}$
- 

Moreover, what makes the operator movement analysis preferable to the head-raising analysis is that a RC behaves in a similar way to not a nominal complement but an adjunct modifying NP. Saito and Murasugi (1990) and Saito et al. (2008) observe that the nominal complement *Hanako-no* ‘Hanako-GEN’ licenses the ellipsis of *taido* ‘attitude’ as shown in (13a), whereas the adjunct *ame-no* ‘rain-NO’ disallows the modified noun *hi* ‘day’ to be elided as represented by the ungrammaticality of (13b):

- (13) a. [Taroo-no taido]-wa yoi ga, [Hanako-no (taido)]-wa yokunai.
 Taro-GEN attitude-TOP good though Hanako-GEN attitude-TOP good.not
 ‘Though Taroo’s attitude is good, Hanako’s isn’t.’ (Saito et al. 2008:253)
- b. [Hare no hi]-wa yoi ga, [ame no *(hi)]-wa otikomu
 clear NO day-TOP good though rain NO day-TOP feel.depressed
 ‘Clear days are OK, but I feel depressed on rainy days.’ (Saito et al. 2008:253)

While the detailed analysis of the contrast between (13a) and (13b) will be demonstrated in Section 6, now it is enough to notice the asymmetry between a complement and an adjunct in (13). Importantly, a RC does not permit a RH to be elided, which is unpredictable if the RC is formed as a complement of the RH, as assumed in the head-raising analysis:

- (14) [[Taroo-ga kinoo atta] hito]-wa yasasii ga,
 Taro-NOM yesterday saw person-TOP kind though
 [[Hanako-ga kinoo atta] *(hito)]-wa kowai.
 Hanako-NOM yesterday saw person-TOP scary
 ‘The person Taroo saw yesterday is kind, but the person Hanako saw yesterday is scary.’
 (Saito et al. 2008:263)

Given that a RC and an adjunct are similar in forbidding a RH or a modified noun to disappear, it is rational to relate the obligatory realization of the RH *hito* ‘person’ in (14) to an adjunct

status of a RC. Therefore, (14) supports the operator movement analysis and goes against the head-raising analysis where a RC is formed as a complement of a RH.

Although the operator movement analysis can account for the ungrammatical pattern of (9) and (14), this analysis cannot explain the availability of reconstruction effects of RHs, discussed in the previous section. Concretely, a RH can show reconstruction effects on anaphor binding (e.g. (4b)) and idiomatic interpretation (e.g. (6b)). Although these reconstruction effects require a RH to be interpreted within a RC, it is difficult for the operator movement analysis to capture them because this analysis assumes that an RC does not contain a RH (or what is lexically identical to the RH).

In order to resolve this issue, Kizu (2005) and Miyamoto (2017) argue that both the head-raising and operator movement analyses are available in principle for Japanese RCs and that the reconstruction effects exemplified by (4b) and (6b) are yielded by the head-raising analysis. While this strategy can account for the availability of reconstruction effects of RHs, employing such a hybrid analysis loses the power to explain the necessity of an overt RH. More concretely, it becomes unclear why the ellipsis of a RH cannot be licensed by the head-raising derivation, in which a RC is derived as a complement of a RH, as schematized in the previous section.

As a way of resolving this tension between the availability of reconstruction effects of a RH and the adjunct status of a RC, I will propose an alternative analysis of Japanese RCs in Section 6.

2.3. Pro-binding analysis

The pro-binding analysis is different from the two analyses discussed so far in assuming no movement in a RC, as illustrated in (15):

- (15) Pro-binding analysis (e.g. Kuno 1973; Murasugi 1991, 2000, among others)
 $\{_{DP} \{_{CP} \dots \text{pro} \dots\} DP\}$

In (15), the RC is adjoined to the RH base-generated in the matrix clause. Therefore, pro-binding analysis can easily capture the obligatory presence of the RH in (14). On the other hand, it cannot account for the reconstruction effects on anaphor binding in (4b) and idiomatic interpretation in (6b), nor the island sensitivity of the RH in (9). Nevertheless, this analysis has been endorsed by some researchers such as Hasegawa (1988), Murasugi (1991, 2000), Fukui & Takano (2000), Chen (2021), among others. The defenders of the pro-binding analysis claim that the island sensitivity of relativization and reconstruction effects of RHs are not compatible with their intuitions. Concretely, they argue that relativization from another embedded relative clause is available in sentences like (16), cited from Kuno (1973):

- (16) $[_{RC} [[_{RC} e_1 \ e_2 \ \text{kiteiru}] \ \text{yoohuku}_1\text{-ga} \ \text{yogoreteiru}] \ \text{sinsi}_2]$
 wearing.is suit-NOM dirty.is gentleman
 ‘the gentleman who [the suit he is wearing] is dirty’ (Kuno 1973:249)

Moreover, those who propose the pro-binding analysis claim that reconstruction effects on anaphor binding are unavailable in sentences like (17):

- (17) *[[_{RC} John₁-ga e₂ taipusita] [zibun₁-no ronbun]₂]²
 John-NOM typed self-GEN paper
 Lit. ‘self’_{s1} paper that John₁ typed’

The island insensitivity of relativization in (16) and the absence of reconstruction effects on anaphor binding in (17) seem to indicate that nothing moves within a RC, as assumed in the pro-binding analysis. However, Kuroda (1992), Sakai (1994) and Hoshi (2004) and others argue that the island insensitivity of relativization in (16) is just apparent, and that (16) can be derived from the sentence with a double nominative subjects in (18a) by moving a RH or a null operator originating at the higher subject position without crossing the island boundary as shown in (18b) and (18c):

- (18) a. [(Sono) sinsi]₁-ga [[pro₁ e₂ kiteiru] yoohuku₂]-ga yogoreteiru
 that gentleman-NOM wearing.is suit-NOM dirty.is
 ‘(that) gentleman is such that the suit that he is wearing is dirty.’
 b. Head-raising analysis
 {_{DP} {_{TP} t₁ {_{DP} ... {pro₁ kiteiru} yoohuku...}-ga ...}₂ {_{D'} {_{CP} sinsi₁ {_{C'} t₂ C}} _D}}
 c. Operator movement analysis
 {_{DP} {_{CP} Op₁ {_{C'} t₁ {_{DP} ... {pro₁ kiteiru} yoohuku₁...}-ga yogoreteiru}} {_{DP} sinsi}}

Since the apparent island insensitivity in (16) can be captured by the head-raising or operator movement analysis, it is not confirming evidence for the pro-binding analysis.

Given the discussion in this section, there is no strong evidence for the pro-binding analysis. Nonetheless, it is unclear whether the pro-binding analysis is unavailable in principle. Moreover, it is controversial whether the head-raising and operator movement analyses are appropriate, as discussed in the preceding sections. This paper provides a diagnostic dataset in Section 4 and demonstrates that Japanese relative clauses must be derived by an overt movement from inside a RC. Before Section 4, Section 3 outlines a discovery of Sakamoto (2019) since the relevant dataset is built on Sakamoto’s observation.

3. Review of Sakamoto’s (2019) observation

Sakamoto (2019) discovered an asymmetry between overt extraction out of a null clausal argument, on the one hand, and covert or no extraction from it on the other. It will be helpful to determine which analyses of Japanese RCs are correct because the three analyses assume different derivations: the head-raising analysis involves overt movements of RHs, the operator movement analysis argues for the movement of the null operator, which corresponds to the covert extraction case in Sakamoto’s (2019) discussion, and the pro-binding analysis assumes no movement.

² The anaphor in this example is the simplex one *zibun* ‘self’, whereas the counterpart in (4b) is in the complex form (i.e. *zibun-zisin* ‘self-self’). Despite this difference, Hoshi (2004:121) notes that (17) is also grammatical for him (and I agree with his judgement).

3.1. Overt extraction from null clausal arguments

In the study of Japanese syntax, it has been observed that a clausal argument can be null (Shinohara 2006; Saito 2007; Tanaka 2008; Kasai 2014, among others).

- (19) a. Hanako-wa [zibun-no teian-ga saiyoosareru to] omotteiru ga, ...
Hanako-TOP self-GEN proposal-NOM accepted.be C think though
'Hanako thinks that her proposal will be accepted, but...'
- b. Taroo-wa [_{CP} Δ] omotteinai.
Taro-TOP think.not
Lit. 'Taro does not think [_{CP} that her/his proposal will be accepted].'
- (Saito 2007:210)

The bracketed part in (19b) represents a null clausal argument, whose antecedent is the bracketed part in (19a).³

It has been observed that an overt extraction from a clausal argument, which is possible as shown in (20a), becomes unavailable when the clause is not phonologically realized, as exhibited by the ungrammaticality of (20b) (Shinohara 2006; Tanaka 2008; Takita 2010; Kasai 2014; Sakamoto 2019, among others).

- (20) a. Keki₁-o Hanako-ga [Taroo-ga t₁ tabeta to] itta.
 cake-ACC Hanako-NOM Taro-NOM ate C said
 ‘Hanako said that Taroo ate the cake.’
 b. *Pafe-o Ziroo-ga [_{CP} Δ] itta.
 parfait-ACC Ziro-NOM said
 Lit. ‘Ziroo thought that Taroo ate the parfait.’

While the contrast in (20) is often noticed in the literature, Sakamoto (2019) further investigates whether covert extraction is prohibited from a null clausal argument.

³ Many previous studies have proposed that (19b) is derived by applying CP-ellipsis to (i) below (Shinohara 2006; Saito 2007; Tanaka 2008; Sakamoto 2019, among others):

(i) Taroo-wa [_{CP} zibun-no teian-ga saiyoosareru to] omotteinai.
Taro-TOP self-GEN proposal-NOM accepted.be C think.not
'Taro does not think that her/this proposal will be accepted.'

The CP-ellipsis approach to (19b) is supported by the interpretation that that sentence has. The anaphor *zibun* ‘self’ in (19b) has ambiguities in its interpretations as shown in the English translation: the strict and sloppy readings. The latter interpretation is easily expected by the CP-ellipsis if the elided part in (19b) contains the anaphor *zibun* ‘self’ and receives the bound variable construal from the subject *Taroo*.

It should be noted that this paper does not care about how a null clausal complement is derived. What matters for this paper is the fact, found by Sakamoto (2019), that such clauses show different behaviours with respect to overt, covert, or non-extraction from them, which is reviewed in the subsequent discussion.

3.2. Covert extraction from null clausal argument

In Japanese, a subject position in a tough-construction can be occupied by a postpositional phrase (PP), as shown in (21).

- (21) [PP Sono dai-kara]₁-ga (John-nitotte) [e₁ tobikomi]-yasui
 that board-from-NOM John-for jump-easy
 Lit. ‘[From that board]₁ is easy (for John) [to jump e₁].’ (Takezawa 1987:215)

Given that a PP tough-construction (hence, PPT) shows subjacency effects as shown in (22), Kikuchi (1987) and Takezawa (1987) argue that PPT involves a null operator movement within the CP as schematized in (23).

- (22) *[Sooiu kinyuukikan-kara]₁-ga (John-nitotte) [[[RC e itumo okane-o
 such financial.agency-from-NOM John-for always money-ACC
 kariteiru] hito]-o sinyoosi]-nikui.
 borrow person-ACC trust-hard
 Lit. ‘[From such a financial agency]₁ is hard (for John) [to trust [a person [RC who always
 borrows a lot of money e₁]]].’ (Takezawa 1987:216)

- (23) [PP sono dai-kara]₁-ga (John-nitotte) [Op₁ [CP t₁ tobikomi]-yasui]].

Importantly, Sakamoto (2019) observes a set of sentences in (24) that PPT is grammatical when the CP is not phonologically realized, as shown in (24b’), where the null CP corresponds to the bracketed one in (24b).

- (24) a. [Hahaoya-kara]₁-ga Taroo-nitotte-wa [Op₁ [CP t₁ aizyoo-o uketeiru to]
 mother-from-NOM Taro-for-TOP love-ACC receive C
 kanzi]-yasui
 feel-easy
 Lit. ‘[From his mother]₁ is easy for Taro [Op₁ to feel [CP that he receives love t₁]].’
 b. [Titioya-kara]₂-ga Ziroo-nitotte-wa [Op₂ [CP t₂ aizyoo-o uketeiru to]
 father-from-NOM Ziro-for-TOP love-ACC receive C
 kanzi]-yasui.
 feel-easy
 Lit. ‘[From his father]₂ is easy for Ziro [Op₂ to feel [CP that he receives love t₂]].’
 b’ [Titioya-kara]₂-ga Ziroo-nitotte-wa [Op₂ [CP Δ] kanzi]-yasui
 father-from-NOM Ziro-for-TOP feel-easy
 Lit. ‘[From his father]₂ is easy for Ziro [Op₂ to feel [CP Δ]].’
 (Sakamoto 2019:117, slightly modified)

Assuming with Kikuchi (1987) and Takezawa (1987) that PPT is derived by a movement of the null operator as in (23), Sakamoto claims that covert extraction from a null CP is possible.

Moreover, Sakamoto (2019) observes that quantifier raising is possible from a null clausal argument as shown in (25):

- (25) a. Taroo-ga [_{CP} Tokyo-no-yooni subete-no mati(-no-koto)-o nigiyaka da
 Taro-NOM Tokyo-GEN-like all-GEN city-GEN-thing-ACC lively COP
 to] iwanakatta.
 C not.said
 ‘Taro did not say [_{CP} that all the cities are lively like Tokyo].’ (Neg > all, all > Neg)
- b. Ziroo-mo [_{CP} Δ] iwanakatta.
 Ziroo-also not.said
 Lit. ‘Ziro did not say [_{CP} Δ], either.’ (Neg > all, all > Neg)
 (Sakamoto 2019:117–118)

Sakamoto (2019) argues that the interpretation in (25a), where the QP object *subete-no mati* ‘all cities’ within the ECM clause takes scope over the matrix negation, can be gained by quantifier raising (QR) of the QP. Importantly, the same interpretation is available for (25b) as well, which shows that QR from a null ECM clause is possible.

Given the observation in (24) and (25), Sakamoto (2019) concludes that a covert extraction from a null clause is possible, unlike the overt counterpart. If this conclusion is on the right track, investigating relativization out of a null clausal argument will be helpful for determining which analysis is correct for Japanese RCs. The next section discusses this topic and provides confirming evidence for the view of relativization as an overt movement of a RH.

4. Impossibility of relativization from a null clausal argument

As the previous section discusses, Sakamoto (2019) found that a null clausal argument forbids an overt extraction from inside it but permits the covert counterpart. Building on this discovery, this section provides a brand-new dataset, showing that a RH must undergo an overt movement from inside a RC to outside it. The relevant data is as follows:

- (26) a. Nozomi-wa [[_{RC} Yuka₁-ga [_{CP} pro₁ t₂ kaitai to] itta] kutu₂]-o katta.
 Nozomi-TOP Yuka-NOM want.buy C said shoes-ACC bought
 ‘Nozomi bought the shoes that Yuka said she wanted to buy.’
- b. Sosite, Jun-wa [[_{RC} Mai₁-ga [_{CP} pro₁ t₂ kaitai] to itta] huku₂]-o katta.
 and Jun-TOP Mai-NOM want.buy C said clothes-ACC bought
 ‘And, Jun bought the clothes that Mai said that she wanted to buy.’
- b’. *Sosite, Jun-wa [[_{RC} Mai₁-ga [_{CP} Δ] itta] huku₂]-o katta.
 and Jun-TOP Mai-NOM said clothes-ACC bought
 Lit. ‘And, Jun bought the clothes that Mai said [_{CP} Δ].’

If (26a) is followed by (26b), we can easily understand what these sentences express, which are shown in the English translations. What matters is that (26b’), where the bracketed CP is null and corresponds to the bracketed part in (26b), is highly degraded. The ungrammaticality of (26b’) indicates that relativization from a null clausal argument is impossible, and it is the same pattern as an overt extraction from such a clause. Given that the covert extraction, like a null operator movement, is permissible from a null clausal argument as shown in (24b’), (26b’)

- (Chomsky 2021:22)

(30) a. Subj seems [to have been assigned Subj to the diplomats]
 └──┘
 IM-copy

b. Subj ..._[v*P] Subj tried [to be assigned Subj to the diplomats]]
 └──────────┘ └──┘
 IM-copy EM-copy

Based on the representational difference in (30), Chomsky captures the asymmetry in acceptability in (29) by proposing an interpretive rule in (31) (see Chomsky 2021:22).

- For the distributive readings, which are obliged by *each*, to be licensed in (29a) and (29b), the subject *one interpreter each* must be reconstructed into the base position, which is c-commanded by *to the diplomats*. Under the interpretive rule in (31), the relevant reconstruction is possible in (30a) because the two *Subjs* are in a IM-copy. In contrast, the lowest copy of *Subj* cannot be available for reconstruction effects because it is a member of a EM-copy and this copy relation cannot yield reconstruction effects under the interpretive rule in (31).

Additionally, I follow Takahashi (2011) and assume that a case morpheme is a K head, which takes DP as its complement and constitutes a KP phase.⁴

⁴ One may wonder why KP functions as a phase. Takahashi (2011) claims that a head with a case-feature including the K head constitute a phase to explain (un)availability of NP-ellipsis. The contrast in (13) above, cited from Saito & Murasugi (1990), illustrated that the nominal complement can undergo ellipsis while modified noun cannot. However, it is also observed that modified noun can be elided:

(i) [Sin-no sinnen]-wa kawaranai ga, [nise-no sinnen]-wa sugu kawaru.
true-GEN conviction-TOP change.not though fake-GEN conviction-TOP easily change
'The true conviction never changes, but the fake (one) easily changes.'
(Kadowaki 2005:194)

Takahashi argues that the (un)grammaticality of (i) and (13b) can be explained by the following assumptions:

(ii) a. A phasal complement can undergo ellipsis (e.g. Takahashi 2002; Boeckx 2009; Gengel 2009).
 b. Phase heads require edges when phase head complements undergo ellipsis.
 (cf. Saito & Murasugi 1990; Saito et al. 2008)
 c. A head with a case-feature is a phase head.

As for the grammaticality of (i), the adjunct *nise-no* 'fake-GEN' is adjoined to KP and located in its edge:

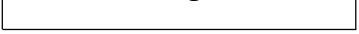
(iii) [_{KP} nise-no [_{KP} [_{NP} sinnen] K]]

With these assumptions in mind, I propose an alternative head-raising analysis of RCs to give a comprehensive account of the empirical facts discussed in this paper.

6. Analysis of empirical facts

Under the assumptions introduced in the previous section, I propose (33) as derivations for Japanese RCs. For the sake of brevity, the relevant derivations are illustrated, based on the simple sentence in (32):

- (32) Taroo-ga [John-ga kaita] hon-o hometa
 Taro-NOM John-NOM wrote book-ACC praised
 ‘Taroo praised the book that John wrote.’

- (33) a. v*P phase
 $\{\{DP\ hon\}\ \{v^*P\ John-ga\ kaita\ \{\cancel{DP\ hon}\}\}\}$

 IM-copy
- b. CP phase
 $\{CP\ \{DP\ hon\}\ \{C'\ \dots\ John-ga\ \{\cancel{DP\ hon}\}\ \{v^*P\ \dots\ kaita\ \dots\}\}\ \dots\}$

 IM-copy
- c. KP phase
 $\{KP\ \{DP\ \{CP\ \{\cancel{DP\ hon}\}\ \{C'\ \dots\}\}\ \{DP\ hon\}\}\ -o\}$

 IM-copy

In (33a), the direct object *hon* ‘book’ in the RC moves from its base position to the edge of v*P. At this phase level, Form Copy assigns a IM-copy to the two instances of *hon* ‘book’ because the higher one occupies a non-theta-position. At the CP level of the RC in (33b), the DP *hon* ‘book’ at the edge of v*P further moves into the edge of CP. Note that the subject *John* at Spec-v*P is assumed to be raised to Spec-TP for case-checking. The completion of the CP phase triggers Form Copy and the two instances of *hon* ‘book’ (and *John-ga* ‘John-nom’) are given a IM-copy since the edge of CP (and TP-Spec) is not a theta-position. Finally, the derived structure in (33b) is left-adjoined to the RH *hon* ‘book’, followed by the Merge of the case

Since the requirement of (iib) is satisfied in (iii), the complement of the phase K head can undergo ellipsis.

In contrast, (13b) is ungrammatical because the adjunct *ame-no* ‘rain-GEN’ in (13b) is adjoined not to KP but rather to NP (due to the property of modifiee *hi* ‘day’):

- (iv) $[_{KP}\ [_{NP}\ ame-no\ [_{NP}\ hi]]\ K]$

This means that the elided part, that is, *hi* ‘day’ of *ame-no hi* ‘rain-GEN day’, is a part of complement of the phase K head (not a complement itself). Also, the KP has nothing in its edge in this case, which is not obedient to (iib).

In short, the assumption that a KP constitutes a phase is motivated by the (un)availability of NP-ellipsis. However, section 6 below adopts the proposal of Saito & Murasugi (1990) to account for the contrast in (13) and the unavailability of eliding a RH, exemplified by (14), for the sake of simplicity. Note that adopting Takahashi’s (2011) analysis introduced here does not have a significant effect on our discussion (but see footnote 5). I am grateful to the SOLE reviewer for bringing this point to our attention.

morpheme *-o*. Under the assumption that a case marker is a K head and constitutes a KP phase (e.g. Takahashi 2011), Form Copy is triggered. The two instances of *hon* ‘book’, one at the edge of CP and the other outside the RC, receive a IM-copy because the higher inscription of *hon* ‘book’, to which the RC is adjoined, is not located at a theta-position.

The proposed derivations in (33) can explain the availability of reconstruction effects on anaphor binding in (4b) and idiomatic interpretation in (6b), repeated in (34a) and (34b).

- (34) a. [[Mai₁-ga e₂ taipusita] [zibun-zisin₁-no ronbun]₂]
 Mai-NOM typed self-self-GEN paper
 Lit. ‘self₁’s paper that Mai₁ typed’ (= (4b))
- b. Raibaru-wa [[John-ga mizukara e₁ hotta] boketu₁]-o yorokonda.
 rival-TOP John-NOM himself dug grave-ACC happy
 Lit. ‘The rival was happy about the grave John himself dug.’
 Idiom. ‘The ruin John himself brought about made his rival happy.’ (= (6b))

As illustrated in (33a–c), all the inscriptions of the RH are in IM-copies, which are assumed to be able to induce reconstruction effects under the assumptions in (31).

Furthermore, the Form Copy-based analysis in (33) can also account for the island sensitivity of relativization, by reducing the ban on extraction from an island domain to the Phase Impenetrability Condition (PIC) suggested by Chomsky (2000):

- (35) Phase Impenetrability Condition
 In phase α with head H, the domain of H is not accessible to operations outside α , only H and its edge are accessible to such operations. (Chomsky 2000:108)

If an island domain does not have an escape hatch for a moved phrase to avoid the PIC domain, relativization from an adjunct/complex NP island, exemplified by (36), is impossible because Form Copy cannot assign a copy relation to an inscription within the PIC domain. Concretely, the RH *hon* cannot move out of the most embedded CP phase in (37) because it is made inaccessible by PIC. Hereafter, the shaded part represents PIC domain.

- (36) *[RC [[RC sono gakusya-ga e₁ e₂ okutta] syoten₁]-ga yaketa] hon₂
 that scholar-NOM sent bookstore-NOM burned book
 ‘the book₁ [RC that the bookstore₂ [RC that that scholar sent e₁ e₂] burned down]]’ (= (9))

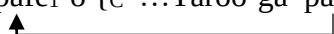
- (37) Ban on relativization from island domains
 {hon {KP {DP {CP sono gakusya-ga hon okutta} {DP syoten}}} -ga}}
- 

It should be noted that even if the higher *hon* is externally merged at the edge of the next phase, say KP in (37), it cannot enter into a copy relation with the other inscription of *hon* within the CP phase via Form Copy since the latter is inaccessible due to PIC.

Moreover, I can also explain the illegitimate relativization from a null clausal argument, repeated in (38), by taking advantage of Sakamoto’s (2019) analysis of asymmetries between overt and covert extraction from null clausal arguments.

- (38) a. Nozomi-wa [[_{RC} Yuka₁-ga [_{CP} pro₁ t₂ kaitai to] itta] kutu₂]-o katta.
 Nozomi-TOP Yuka-NOM want.buy C said shoes-ACC bought
 ‘Nozomi bought the shoes that Yuka said she wanted to buy.’ (= (26a))
- b. Sosite, Jun-wa [[_{RC} Mai₁-ga [_{CP} pro₁ t₂ kaitai] to itta] huku₂]-o katta.
 and Jun-TOP Mai-NOM want.buy C said clothes-ACC bought
 ‘And, Jun bought the clothes that Mai said that she wanted to buy.’ (= (26b))
- b’. *Sosite, Jun-wa [[_{RC} Mai₁-ga [_{CP} Δ] itta] huku₂]-o katta.
 and Jun-TOP Mai-NOM said clothes-ACC bought
 Lit. ‘And, Jun bought the clothes that Mai said [_{CP} Δ].’ (= (26b’))

Sakamoto argues that a null clausal argument is derived from a phasal ellipsis in the sense of Bošković (2014). Specifically, the null embedded CP in (39b) results from eliding the entire CP phase in (40b). Henceforth, strikethroughs indicate elided elements as well as non-pronounced copies.

- (39) a. Keki₁-o Hanako-ga [Taroo-ga t₁ tabeta] to itta.
 cake-ACC Hanako-NOM Taroo-NOM ate C said
 ‘Hanako said that Taroo ate the cake.’ (= (20a))
- b. *Pafe-o Ziroo-ga [_{CP} Δ] itta.
 parfait-ACC Ziroo-NOM said
 Lit. ‘Ziroo thought that Taroo ate the parfait.’ (= (20b))
- (40) a. The object *pafe-o* moves into the edge of CP:
 $\{\text{CP } \text{pafe}_1\text{-o } \{\text{C'} \dots \text{Taroo-ga } \text{pafe}_{1-\theta} \text{ tabeta} \dots\}\}$

- b. The ellipsis of the entire CP, removing phonological information from CP:
 $\{\text{CP } \text{pafe}_1\text{-o } \{\text{CP } \dots \text{Taroo-ga } \text{pafe}_{1-\theta} \text{ tabeta} \dots\}\}$
- c. The further movement cannot be overt:
 $\{\text{pafe}_{1-\theta} \dots \{\text{CP } \text{pafe}_{1-\theta} \{\text{C'} \dots\}\}\}$


(40a) shows the movement of the direct object *pafe-o* ‘parfait-ACC’ to the edge of CP. In (40b), phasal ellipsis applies to the entire CP, getting rid of phonological information on the CP and what is contained within the CP. PIC makes the CP phase except its edge inaccessible to further operations. The further movement of *pafe-o* ‘parfait-ACC’ from the edge of the CP to a higher position is possible, as shown in (40c). On the other hand, such a movement becomes covert since the moved element has already lost its phonological information due to the phasal ellipsis of CP. Therefore, this analysis can explain the availability of a covert movement from a null clausal argument, represented by (24) and (25), is explained. In contrast, an overt movement out of a null clausal argument cannot be implemented in principle.

The Form Copy-based approach proposed here can keep the same explanation for asymmetries between overt and covert extraction from a null clausal argument. Suppose that

the higher instance of *pafe-o* ‘parfait-ACC’ in (39b) is externally merged, as shown in (41a). The two inscriptions of *pafe-o* ‘parfait-ACC’ at the edge of the CP and at a higher position outside the elided CP are assigned a copy relation through Form Copy, as illustrated in (41b). Under the assumption that the higher copy inherits the phonological information from the lower one, the higher copy becomes a null even in this approach.

- (41) a. An instance of *pafe-o* ‘parfait-acc’ is externally merged outside CP:
 {*pafe-o* ... {~~CP~~ *pafe-o* {~~C'~~ ...}}}
- b. Form Copy applies and the higher copy receives information on null pronunciation:
 {~~*pafe*~~_{1-o} ... {_{CP} *pafe*_{1-o} {~~C'~~ ...}}}
 IM-copy/EM-copy

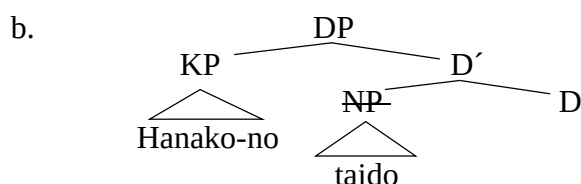
The ban on relativization out of a null clausal argument, repeated in (42b), is explained in the same way. As schematized in (43), the higher copy of the RH *huku* ‘clothes’ receives a null status from the lower copy, which is contained within the elided CP.

- (42) a. Nozomi-wa [[_{RC} Yuka₁-ga [_{CP} pro₁ t₂ kaitai] to itta] kutu₂]-o katta.
 Nozomi-TOP Yuka-NOM want.buy C said shoes-ACC bought
 ‘Nozomi bought the shoes that Yuka said she wanted to buy.’ (= (38a))
- b. *Sosite, Jun-wa [[_{RC} Mai₁-ga [_{CP} Δ] itta] huku₂]-o katta.
 and Jun-TOP Mai-NOM said clothes-ACC bought
 Lit. ‘And, Jun bought the clothes that Mai said [_{CP} Δ].’ (= (38b’))

- (43) At the higher v*P phase within the RC
 {~~*huku*~~ {_{v*P} Mai-ga {~~CP~~ *huku* {~~C'~~ ...}} itta}}
 IM-copy

In addition, our analysis can also capture the adjunct status of the RC, unlike the traditional head-raising analysis, by assuming the mechanism of NP ellipsis suggested by Saito and Murasugi (1990) and Saito et al. (2008), among others. They argue that the null nominal complement in (44a) is derived by NP-ellipsis, which is assumed to be possible only when Spec-DP is filled. A schematic structure of the relevant part is illustrated in (44b).

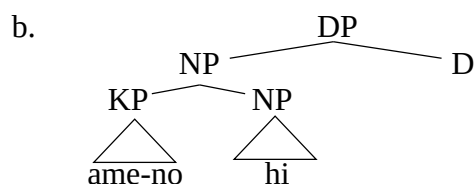
- (44) a. [Taroo-no taido]-wa yoi ga, [Hanako-no (taido)]-wa yokunai.
 Taro-GEN attitude-TOP good though Hanako-GEN attitude-TOP good.not
 ‘Though Taroo’s attitude is good, Hanako’s isn’t.’ (= (13a))



In (44b), the genitive phrase *Hanako-no* ‘Hanako-GEN’ occupies Spec-DP, which enables NP-ellipsis to take place. As a result, the optionality of the second *taido* ‘attitude’ is explained.

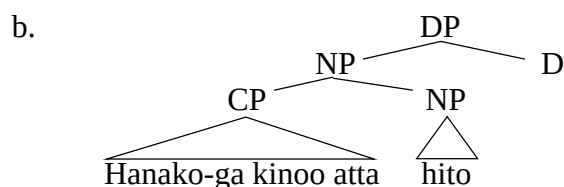
Moreover, this analysis can explain the obligatory presence of the second *hi* ‘day’ in (45a) because adjuncts are not located in Spec-DP and the requirement of NP-ellipsis is not satisfied.

- (45) a. [Hare no hi]-wa yoi ga, [ame no *(hi)]-wa otikomu
 clear NO day-TOP good though rain NO day-TOP feel.depressed
 ‘Clear days are OK, but I feel depressed on rainy days.’ (= (13b))



Since the proposed analysis in (33) assumes that a RC is left-adjoined to a RH, the ungrammatical pattern of (46a) can be captured in the same way as the counterpart in (45a).

- (46) a. [[Taroo-ga kinoo atta] hito]-wa yasasii ga,
 Taro-NOM yesterday saw person-TOP kind though
 [[Hanako-ga kinoo atta] *(hito)]-wa kowai.
 Hanako-NOM yesterday saw person-TOP scary
 ‘The person Taro saw yesterday is kind, but the person Hanako saw yesterday is scary.’ (= (14))



The simplified schematic representation in (46b), where the CP is adjoined to the RH *hito* ‘person’, cannot license the NP-ellipsis because nothing occupies Spec-DP. That is why the RH cannot be omitted in (46a).

So far, I have demonstrated that the Form Copy-based analysis of Japanese RCs can account for island sensitivity of relativization, reconstruction effects of RHs, and the obligatoriness of an overt RH. Before concluding this paper, a further consequence of our proposals will be discussed in the next section.

7. Why are reconstruction effects of RHs unavailable for some native speakers?

The Form Copy-based approach to Japanese RCs also provides a plausible account of why reconstruction effects of RHs are not acceptable for some native speakers, as reported by Fukui & Takano, Hasegawa (1988), Hoji (1985), and Murasugi (1991, 2000), among others. This approach can yield another derivational pattern in (47), which is slightly different from (33) in that the RC is adjoined to not NP but KP in (47c):

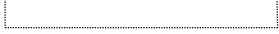
- (47) a. v*P phase
 $\{\{_{\text{KP}} \text{hon-o}\} \{_{\text{v*P}} \text{John-ga kaita } \{\{_{\text{KP}} \text{hon-o}\}\} \}$

IM-copy
- b. CP phase
 $\{_{\text{CP}} \{_{\text{KP}} \text{hon-o}\} \{_{\text{C}'} \dots \text{John-ga } \{\{_{\text{KP}} \text{hon-o}\} \{_{\text{v*P}} \dots \text{kaita } \dots\} \} \} \dots\}$

IM-copy
- c. KP phase
 $\{_{\text{KP}} \{_{\text{CP}} \{\{_{\text{KP}} \text{hon-o}\} \{_{\text{C}'} \dots\} \} \{_{\text{KP}} \text{hon-o}\} \}$ ⁵

The derivations in (47a) and (47b) proceed in almost the same way as the ones in (33a) and (33b). The sole difference is that what moves in (47a, b) is not the NP *hon* but the KP *hon-o* ‘book-ACC’. In (47c), the derived CP is left-adjoined to the KP *hon-o* ‘book-acc’.⁶ Although KP is a phase, the adjunction of the RC to the KP occurs later than the completion of KP. Therefore, it does not lead to the completion of any phase. In this case, Form Copy targeting the two inscriptions of the KP cannot take place until the next phase, the matrix v*P, is completed. The relevant step is illustrated in (49), which is based on the simple Japanese sentence in (48).

- (48) Taroo-ga [John-ga kaita] hon-o hometa
Taro-NOM John-NOM wrote book-ACC praised
‘Taroo praised the book that John wrote.’
(= (32))

- (49) matrix v*P phase
 $\{_{\text{v*P}} \text{Taroo-ga } \{_{\text{v*}'} \{_{\text{VP}} \{_{\text{KP}} \{_{\text{CP}} \{\{_{\text{KP}} \text{hon-o}\} \{_{\text{C}'} \dots\} \} \{_{\text{KP}} \text{hon-o}\} \} \text{hometa}\} \text{v*}\}$

EM-copy

⁵ As discussed in footnote 4, Takahashi (2011) claims that a complement of the KP can undergo ellipsis when the KP has something in its edge position. If this analysis is on the right track, the derivation in (47c) would lead to the ellipsis of the RH *hon* ‘book’. This means that those who disallows reconstruction of RHs in RCs accept the ellipsis of RHs in Japanese. However, it does not seem to be true. Note that I assume with Saito & Murasugi (1990) and Saito et al. (2008) that an adjunction does not license the NP-ellipsis. Therefore, I tentatively assume that (i) in footnote 4 is grammatical because an adjunct-like element *nise-no* ‘fake-GEN’ occupies Spec-KP, unlike Takahashi (2011) (see also Saito & Murasugi 1990; Saito et al. 2008).

⁶ The SOLE reviewer asks why KP is externally merged in this case. However, I do not necessarily assume that KP must undergo External Merge in (47) and (49). In (49), the two highest instances of KP are assigned EM-copy via Form Copy because Duality of Semantics in (27) requires theta-positions to be filled by EM. Nevertheless, if I regard Duality of Semantics in (27) as a constraint on representations and assume with Chomsky (2021) that history of derivations is inaccessible for further computations, then the representations in (47) and (49) can be created, whether the highest instance of KP is externally merged or moved from lower positions. Concretely, when derivations proceed until the stage of (49), Form Copy applies. MS finds the highest KP at the theta-position and regards it as what is externally merged there based on Duality of Semantics as the representational constraint because this stage of derivations cannot access to the previous step where the highest KP is merged. Therefore, the two highest instances of KP results in EM-copy in (49), regardless of the actual operation introducing the highest KP.

Significantly, the KP with the RC occupies a theta-position where it receives a theta-role from the verb *hometa* ‘praised’. Under the assumption in Chomsky (2004:117) that adjuncts are invisible for a theta-role assignment, what occupies a theta-position is regarded as the higher inscription of the KP *hon-o* ‘book-acc’ only. Consequently, Form Copy assigns EM-copy between it and the KP at the edge of the CP. According to the interpretive rule in (31), EM-copies cannot induce reconstruction effects. This is a desirable consequence: if those who regard reconstruction effects of RHs as unavailable employ the derivations illustrated in (47) and (49) for Japanese RCs, and the others use (33) for the same constructions, then the inconsistency in the literature regarding (un)acceptability of reconstruction effects in Japanese RCs can be accounted for.⁷

8. Conclusions

The aims of this paper are twofold: to present brand-new data endorsing an overt movement of RHs out of RCs and to provide an alternative head-raising derivation of Japanese RCs. As for the first purpose, the relevant data was created based on Sakamoto’s (2019) discoveries: the asymmetry between an overt and covert extraction from a null clausal argument. Observing that relativization from a null clausal argument is impossible in Section 4, I claimed that RH must overtly move from inside the RC to the outside of it. However, the traditional head-raising cannot account for the similarity between a RC and an adjunct regarding ellipsis of the following nominals. Therefore, as the second purpose, Section 6 proposed a different kind of head-raising analysis, based on Form Copy suggested by Chomsky (2021). Moreover, I demonstrated that the proposed analysis can explain the island sensitivity of relativization, reconstruction effects of RHs, and RHs’ resistance to NP ellipsis.

Furthermore, I have discussed the possibility that the Form Copy-based approach to Japanese RCs can provide an account of the difference among individuals in (un)acceptability of reconstruction effects of RHs. I explained it, by claiming that the proposed analysis can lead to two possible derivational patterns for Japanese RCs and that the I-languages of those who accept reconstruction effects and the others depend on these two different derivational ways for Japanese RCs.

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⁷ Kitao (2011), Morita (2013), and Hayashi (2022) propose another kind of analyses that assumes an overt movement of a RH and an adjunction of a RC to a RH. Although these analyses can explain island insensitivity of relativization, reconstruction effects of RHs, and adjunct status of a RC, they cannot provide a solution to the issue discussed in this section, unlike the proposed analysis here. See the relevant studies for the detailed analyses proposed there.

Abbreviations

NOM	nominative
ACC	accusative
GEN	genitive
TOP	topic

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Grandmas' conspiracy?: a sociolinguistic account of the realizations of /t/ by third-generation heritage Modern Greek speakers in Toronto

Theodoros Lyriotakis

This study examines how the presence and the absence of grandmothers (first-generation immigrants) affect a specific feature of the phonological system of third-generation heritage Modern Greek speakers in Toronto, namely, the variation attested in the realizations of the voiceless alveolar stop /t/. Data from 27 participants show that when grandmothers were actively involved, homeland-like non-aspirated [t] realizations prevail. However, reduced involvement or absence of grandmothers leads to increased occurrences of aspirated [t^h] realizations, influenced by Canadian English. The results highlight the role of family dynamics in shaping the speakers' phonology, emphasizing that phonological studies should consider the broader sociolinguistic context.

1. Introduction

Greek immigration to Canada has deep roots, dating back to the last quarter of the 19th century. However, the major waves of immigration from Greece to Canada took place during the 20th century, in three main phases: (a) in the late 1940s, following World War II and the political, moral, and financial devastation of the Greek Civil War; (b) in the late 1950s and early 1960s, driven primarily by economic hardship, especially in the rural areas of Greece; and (c) in the late 1960s and mid-1970s, due to political instability and the significant dangers posed by the military junta and the transitional period that followed, until the restoration of democracy¹.

Most Greek immigrants settled in Ontario, primarily in the Greater Toronto Area. Their settlement enabled the gradual development of robust Greek diasporic communities. Greek immigrants founded schools, churches, and cultural associations, which have been essential over the years for preserving Greek culture, identity, and the Modern Greek (hereafter MG) language, serving as stable settings for MG use. At the same time, the settlement of Greeks, along with immigrants from other countries, led to the creation of a complex yet highly productive bi-/multilingual and bi-/multicultural environment in terms of language use. Within the broader sociolinguistic landscape, heritage MG functions as a minority language, while Canadian English (hereafter CE) is the dominant language (cf. Montrul 2015b; Polinsky 2018; Montrul & Polinsky 2021, among others).

¹ For more information about the Greek immigration, see Georgogiannis 1996.

Bilingualism, or even multilingualism, is thus a norm among Greek immigrants, particularly those of the second and third generations, that is, heritage MG speakers. This term refers to unbalanced bilingual or, in some cases, multilingual individuals whose weaker language is the one related to their cultural heritage and functions as a minority language within the broader sociolinguistic environment, while their stronger language is the dominant one (see Polinsky 2018; Montrul & Polinsky 2021, among others). Their linguistic repertoire is, thus, shaped by input received in both MG and CE, and, in some cases, in other minority languages.

In this sociolinguistic environment, the dominant language tends to exert significant pressure on the heritage language, in our case, on heritage MG. Although MG-speaking environments exist in Toronto, maintaining the heritage language across generations, particularly among third-generation heritage speakers, remains a significant challenge. In cases of longstanding contact between a heritage language and a dominant language, the former is widely influenced (see Rothman 2009; Kupisch & Rothman 2016, among others). The challenge for heritage language maintenance is amplified even further for third-generation speakers, especially: (a) with the onset of schooling; (b) when parents (second-generation immigrants) possess limited communicative competence in their heritage language; and (c) when the shift toward the dominant language occurs early within the family leading to incomplete acquisition and/or attrition of the heritage language (see Montrul 2008, 2013, 2015b; Tsimpli 2014; Laleko & Polinsky 2015; Polinsky 2018; Polinsky & Scontras 2020, among others). These difficulties are particularly evident in core grammatical domains, including phonology, morphology, and syntax, and in heritage speakers' lexical competence.

Within this context, the present study explores the phonological variation attested in the realization of the voiceless alveolar stop /t/ by third-generation heritage MG speakers in Toronto, that is, within a broader multilingual and multicultural environment where the dominant language is CE. Specifically, the study focuses on how a social—and, as it will be argued later, a sociolinguistic—factor, namely the presence and the absence of grandmothers (first-generation immigrants) during their grandchildren's (third-generation immigrants) language development, shapes and conditions the variation in /t/ realizations.

2. Background

Since the present study investigates the phonological realizations of /t/ in heritage MG speech, which are closely associated with the phonological competence of heritage speakers, it is essential to first present the concept of phonological competence and the relevance of pronunciation to heritage languages, as well as the phonological behavior of the voiceless alveolar stop in the two languages in contact, namely MG and CE.

2.1. Phonological competence

Phonological competence constitutes an integral part of the linguistic competence (Council of Europe 2020). In studies investigating the acquisition, re-acquisition, learning, and maintenance of foreign and heritage languages, particular focus is placed on speech production, and, more specifically, on pronunciation (cf. Levis 2007; Pennington & Rogerson-Revell 2019, among others). In heritage speech, this seems to be attributed to the fact that pronunciation, along with

speech acts, takes precedence in interpersonal oral communication and, thus, it is the most easily perceived as deviating from the language as spoken in the homeland.

Concerning heritage MG in Canada, it has been reasonably argued that a new Greek Canadian Koiné seems to be under development among first-generation Greek immigrants (see Pappas et al. 2022). This finding appears to hold for the linguistic system of the first generation, and it may also apply to the morphology, syntax, and lexicon of second-generation and third-generation heritage speakers (cf. Montrul & Foote 2014, for lexical access in L2 and heritage Spanish; Montrul et al. 2014, for gender agreement in heritage Spanish; Gavriilidou & Mitits 2020, for loanblends in heritage MG in Chicago, among others). However, this hypothesis does not seem to apply to the phonological system of second-generation speakers, and to an even greater extent, of third-generation Greek immigrants in Toronto and, generally, in Canada. Specifically, instead of a koineization process, what is observed in the realizations of heritage MG speakers is extended phonological variation, particularly concerning the realization of segments, both consonants and vowels (see Lyriotakis 2024).

2.2. Voiceless alveolar stop /t/ in Modern Greek and Canadian English

The realizations of voiceless stops, particularly the voiceless alveolar stop /t/ which is considered underlyingly unmarked for aspiration, vary across languages and dialectal varieties. A common set of realizations includes (i) the non-aspirated [t] and (ii) the aspirated [t^h], where the vibration of the vocal cords occurs with a delay after the release of the stop consonant. According to the relevant literature, Voice Onset Time (hereafter VOT), that is, the interval between the release of a stop consonant and the onset of voicing of the following vowel (Lisker & Abramson 1964), typically measured in milliseconds, is the primary, though not the sole, cue of aspiration (see Keating 1984; Vaux 2002, among others).

In MG, both in Standard Modern Greek and most dialectal varieties, the underlying /t/ is realized as a non-aspirated [t], regardless of the phonological environment (Holton et al. 1997; Arvaniti 2007, among others). This absence of aspiration is consistent across the vast majority of MG dialects, with only a few exceptions attested in Cyprus, the Dodecanese islands, Chios, Ikaria, and Southern Italy (see Trudgill 2003; Armostis 2011; Nikolou & Frantzi 2019, among others), where aspirated stops often surface in combination with gemination.

In English spoken in the Americas, including CE, the underlying /t/ may be realized either as a non-aspirated [t] or as an aspirated [t^h], depending on the phonological environment. Aspirated realizations typically occur at word boundaries (Clark & Yallop 1995; Beach et al. 2001, among others) and in most word-internal positions, especially when /t/ occurs word-initially or in the onset of a stressed syllable. Instances of word-final aspiration have also been attested (Spencer 1996; Vaux 1998, among others). On the contrary, /t/ is usually realized as non-aspirated [t] after the consonant /s/ (Keating 1984; Spencer 1996, among others) and occasionally in word-medial unstressed positions (Vaux 2002, among others). However, /t/ following /s/ may be aspirated as well when there is a clearly perceived morpheme boundary separating the two consonants (Jones 1988). It has also been argued that, in all positions, stops feature some measurable degree of aspiration (Keating 1984).

Precisely determining when the underlying /t/ is realized as aspirated or non-aspirated in English is quite challenging, as different studies reach different conclusions. The aim of presenting the above findings is to demonstrate that, in contrast to MG, aspirated realizations are very frequent in CE. Therefore, in the context of language contact between CE as the

dominant language and MG as a heritage, minority language, interferences from the dominant CE may lead to the emergence of aspirated realizations of /t/ in heritage MG speech.

3. Methodology

The data relevant to /t/ realizations were collected through fieldwork conducted within the Greek diasporic community of Toronto. The approach aimed at documenting both the phonological competence of third-generation heritage MG speakers and the sociolinguistic variable associated with /t/ realizations, namely, the presence or absence of grandmothers and their role in their grandchildren's upbringing and language development. Specifically, the relevant oral data were elicited through semi-structured interviews and free conversations, recorded using the Tascam DR-40X professional recorder.

While the semi-structured interviews provided focused information on heritage MG phonological competence, it was primarily the data collected through free conversations which offered valuable insights into the speakers' phonological systems and sociolinguistic profiles. The friendly and informal ambiance of these conversations encouraged both natural heritage speech production and the emergence of personal narratives. This method was significantly effective for examining how the presence and the absence of grandmothers influence the phonological variation observed in /t/ realizations.

The participants were 27 third-generation heritage MG speakers (11 males, 16 females), aged 18–28 ($\mu = 23.3$), all born and raised in Toronto, schooled in CE, and permanent residents of the Greater Toronto Area. The speakers were not from Cyprus, the Dodecanese islands, Chios, Ikaria, or Southern Italy, and thus they had no linguistic input from these dialectal varieties, where, as mentioned in Subsection 2.2, aspirated [t^h] realizations of /t/ are attested, similar to those observed in CE. The total duration of the recordings was 33 hours and 29 seconds. The oral data were transcribed using the Greek alphabet, translated into English to ensure accessibility, and sociolinguistically annotated with variables such as family language policy, parents' social and financial status, use of MG outside the family, degree of involvement in the local diasporic community, and grandparents' presence during language development². Subsequently, for the purposes of this study, all /t/ realizations, as well as their phonological environment (a syllable or two adjacent syllables), were acoustically analyzed using PRAAT³ and phonetically transcribed using the International Phonetic Alphabet (IPA).

The participants also completed a research questionnaire featuring questions about their demographics, as well as questions aimed at documenting aspects of their social and sociolinguistic profiles, such as time spent with parents during their upbringing, education in MG (see for instance, Saturday schools, usually operating under the auspices of the local Greek Orthodox churches, and community-driven language teaching/learning programs), participation in cultural activities organized by the Greek communities of Toronto, and frequency of trips to Greece.

² The full list of social and sociolinguistic variables considered during the annotation is not directly relevant to this specific study, as they are conditioned by the broader objectives of the research program to which the study is affiliated.

³ See: Boersma, P. & D. Weenink (2024). PRAAT: doing phonetics by computer (version 6.4.46) [computer program]. Retrieved 4th November 2025, from <https://www.fon.hum.uva.nl/praat/>

For the purposes of this study, particular focus was placed on identifying, both through the aforementioned free conversations and the questionnaires, whether third-generation speakers had grown up with only grandmothers, only grandfathers, or with both (sets of) grandparents.

4. Findings

The data elicited through this sociolinguistically oriented fieldwork provided insights into the phonological systems and sociolinguistic profiles of third-generation heritage MG speakers in Toronto. The findings highlight issues related to the status of the participants as heritage MG speakers, their phonological competence and, in particular, the variation attested in /t/ realizations, and the significant impact of the presence or absence of grandparents during language development on these specific realizations.

4.1. Third-generation heritage Modern Greek speakers in Toronto

As already mentioned in the Introduction, according to the relevant literature, heritage speakers are defined as individuals who are either simultaneously or sequentially bilingual in both a minority language, always associated with their ethnic background, and the dominant language of the broader sociolinguistic environment. The heritage speakers typically have lower proficiency in the minority language, that is, their heritage language, while the dominant language, which is the official language of the society in which they live, is stronger within their linguistic repertoire (Montrul 2015b; Polinsky 2018; Polinsky & Scontras 2020; Montrul & Polinsky 2021, among others).

In this study, the focus is placed on third-generation heritage speakers, that is, the grandchildren of first-generation immigrants from Greece to Canada. The findings of the sociolinguistically-driven approach applied in this study indicate that third-generation heritage speakers differ significantly from their parents, that is, the second-generation heritage speakers, in terms of exposure to MG due to two primary factors:

- (a) While second-generation speakers grew up in predominantly MG-speaking families, as their parents, having recently immigrated from Greece to Canada, had limited proficiency in CE, third-generation speakers grew up in predominantly CE-speaking families. Their parents, that is, second-generation speakers, had already shifted from MG to CE, with the latter becoming the strongest language within their linguistic repertoire. This shift suggests that the quality and quantity of MG input the third-generation speakers received was limited.
- (b) While second-generation speakers received input in homeland MG from their parents, third-generation speakers received from their parents input in heritage MG, a diasporic variety of MG either incompletely acquired due to the shift to CE, especially with the onset of schooling, or already attrited under the influence of the dominant language (cf. Montrul 2008, 2013, 2015b; Montrul & Polinsky 2021, among others). The extent of this incomplete acquisition or attrition varies and it is conditioned by several factors, such as the speaker's motivation and the exposure to MG outside the family. Nevertheless, the variety of MG spoken by the second generation and transmitted to third-generation speakers differs significantly in quality from the homeland MG spoken by the first generation and transmitted to second-generation speakers. What both second-generation

and third-generation speakers share is the opportunity to study MG in various official and semi-official educational settings.

In this context, third-generation speakers face great challenges in acquiring and/or maintaining their heritage language, but at the same time, strong networks with the Greek diasporic community and positive attitudes towards heritage MG (cf. Montrul 2015a) can contribute to the maintenance of the language across generations. However, the present study demonstrates that the diverse social and sociolinguistic factors shaping each speaker's profile interact with their linguistic competence and, in particular, with their phonological competence. Variations in MG input quality and quantity, shaped by these factors, result in a lack of homogeneity in the oral production skills of third-generation speakers. Therefore, significant inter-speaker variation is attested in their phonological realizations. In the context of this study, an eminent and seemingly inexplicable variation is attested in the realizations of the underlying /t/ among third-generation speakers who differ in certain social and sociolinguistic factors. The findings of this study suggest that the social factor of the presence of grandparents, and, as I will argue later on, especially grandmothers, during the early years of third-generation speakers' lives constitutes an essential sociolinguistic factor as well. This can be attributed to the fact that this factor significantly influences both the quality and the quantity of MG input, as when grandmothers are present, the restricted input in MG provided by parents is compensated by input provided by grandmothers.

4.2. Phonological variation in /t/ realizations in heritage Modern Greek

The acoustic analysis⁴ of the heritage MG oral data collected for this study revealed two distinct realizations of the underlying voiceless alveolar stop /t/, namely (a) a non-aspirated realization [t] (see 1a, 1b, 1c), and (b) an aspirated realization [t^h] (see 2a, 2b, 2c).

(1) UNDERLYING STRUCTURE	REALIZATION	GLOSS
a. /'ta.ksi/	['ta.ksi]	classroom.FEM.NOM.SG ⁵
b. /'tu.ba/	['tu.ba]	fall.FEM.ACC.SG
c. /'ta.ma/	['ta.ma]	oblation.N.NOM.SG
(2) UNDERLYING STRUCTURE	REALIZATION	GLOSS
a. /po.'te/	[po.'t ^h e]	never
b. /'to.te/	['t ^h o.te]	then
c. /va.'to.mu.ra/	[va.'t ^h o.mu.ra]	blackberry.N.ACC.PL

The examples presented above highlight two distinct types of realizations. The first variant, the non-aspirated [t], as already mentioned in Subsection 2.2, is the unmarked, standard realization in homeland MG, both in the official variety, namely Standard Modern Greek (see Arvaniti 2007, among others), and in the vast majority of MG dialectal varieties. Therefore, it is expected to have been maintained in heritage MG, to a greater or lesser extent, depending on each

⁴ This study being sociolinguistically oriented, it will not present in depth the acoustic measurements of the two realizations of /t/; instead, it will focus on the interplay between the attested variation and the sociolinguistic factor, namely the presence or absence of grandmothers.

⁵ The denomination of case for each noun is based on its usage within the relevant morphosyntactic context as depicted in the recordings.

speaker's exposure to MG input. Figure 1 presents an illustrative example of the waveform and spectrogram of the non-aspirated [t] realization in the word ['ta.ksi] 'classroom.FEM.NOM.SG', as surfacing in third-generation heritage MG speech in Toronto. The mean VOT for all non-aspirated realizations attested in the recordings is 20ms.

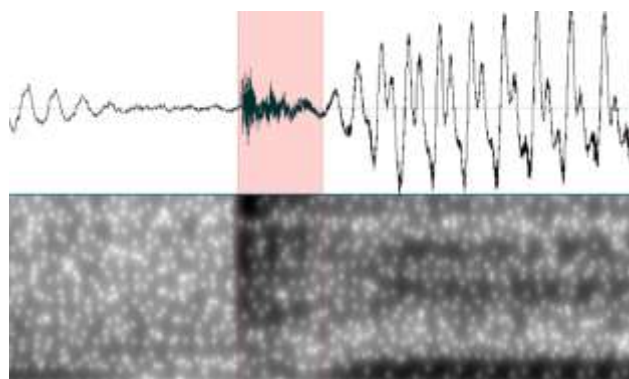


Figure 1. Wavegram and spectrogram of [t] in heritage MG speech

The aspirated [t^h] variant is unattested in MG, with the exception of the dialectal varieties mentioned in Subsection 2.2., and it is not considered an acceptable realization by native MG speakers. However, it is attested in heritage MG spoken in sociolinguistic environments where the dominant language is English (see Lyriotakis 2024). More specifically, in this study, this realization appears to result from phonological transfer (cf. Chang et al. 2011; Chang 2019, among others) from the dominant CE to heritage MG, within a context of language contact. According to the relevant linguistic literature, presented in Subsection 2.2., /t/ is aspirated in English, including CE, in specific word positions (Clark and Yallop 1995; Vaux 2002, among others). Figure 2 presents an illustrative example of the waveform and spectrogram of the aspirated [t^h] realization in the word ['t^ho.te] 'then', as surfacing in third-generation heritage MG speech in Toronto. The mean VOT for all aspirated realizations attested in the recordings is 79ms.

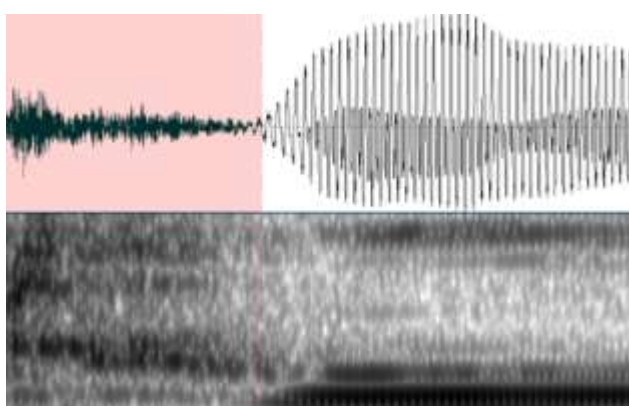


Figure 2. Wavegram and spectrogram of [t^h] in heritage MG speech

Table 1 presents the number of tokens with an underlying /t/ per speaker and the number of tokens and the relevant ratio for each type of realization, namely, non-aspirated [t] and aspirated

[t^h], per speaker, as long as the total number of the analyzed tokens and the mean ratio for each type of realization. The ranking number assigned to each speaker is accompanied by their gender and their age.

Speaker	Tokens /t/	[t] Realizations	[t] Ratio	[t ^h] Realizations	[t ^h] Ratio
1 (M, 22)	33	29	0.879	4	0.121
2 (F, 26)	57	11	0.193	46	0.807
3 (F, 18)	35	5	0.143	30	0.857
4 (M, 26)	46	10	0.217	36	0.783
5 (F, 21)	29	27	0.931	2	0.069
6 (M, 24)	36	5	0.139	31	0.861
7 (F, 28)	68	61	0.897	7	0.103
8 (F, 20)	44	6	0.136	38	0.864
9 (F, 24)	46	9	0.196	37	0.804
10 (M, 19)	35	7	0.200	28	0.800
11 (M, 27)	51	5	0.098	46	0.902
12 (F, 25)	49	44	0.898	5	0.102
13 (F, 20)	31	6	0.194	25	0.806
14 (F, 24)	27	24	0.889	3	0.111
15 (M, 20)	54	49	0.907	5	0.093
16 (F, 27)	48	17	0.354	31	0.646
17 (M, 23)	18	3	0.167	15	0.833
18 (F, 26)	25	2	0.080	23	0.920
19 (M, 28)	55	52	0.945	3	0.055
20 (F, 23)	61	51	0.836	10	0.164
21 (F, 20)	52	5	0.096	47	0.904
22 (M, 18)	48	43	0.896	5	0.104
23 (F, 26)	43	7	0.163	36	0.837
24 (M, 25)	69	67	0.971	2	0.029
25 (F, 27)	52	50	0.962	2	0.038
26 (M, 22)	46	10	0.217	36	0.783
27 (F, 20)	33	6	0.182	27	0.818
Total	1,191	612	-	579	-
μ Ratio	-	-	0.474	-	0.526

Table 1. Number of tokens featuring an underlying /t/ and number of tokens alongside the relevant ratios for each type of realization

Based on a first account of the total raw number of each type of realization, it seems that this group of speakers shows a slight preference for the non-aspirated variant [t], which is the unmarked realization in homeland MG, both linguistically and socially. However, this interpretation does not seem to be valid, since some third-generation speakers realized more tokens than others, a fact which seems to influence an interpretation based on raw numbers. Following this rationale, when normalizing the data by calculating the ratios for each type of realization per speaker and the mean ratios, the trend is reversed. Specifically, the mean ratios, 0.474 for [t] and 0.526 for [t^h], indicate that, across all speakers, there is a slight preference for the aspirated variant [t^h].

Despite this general preference, the above-presented table clearly indicates that the two distinct types of realizations coexist in the speech of third-generation heritage MG speakers and they seem to be in complementary distribution. Therefore, I can argue that, although the [t^h] realization is highly marked in homeland MG, it appears to be unmarked in the heritage MG spoken by this group of speakers. This could explain the near-equal frequency of the two types of realizations.

However, while both types are almost evenly represented across the group as a whole, they are not evenly distributed among individual speakers of the group. Specifically, some speakers significantly prefer the non-aspirated variant, while others favor the aspirated one. This advocates for further investigation of possible factors that could explain the variation attested in the distribution of the two types of realizations among speakers.

Age and gender do not seem to influence the attested phonological variation. However, it is important to clarify that, when discussing age, I am referring to the subtle age differences within the specific age bracket (18–28) examined in this study. Observations on heritage MG speakers in Toronto indicate that, if speakers within this bracket were compared to speakers from a different age bracket, for instance, 38–48, age would emerge as a significant social factor influencing the different phonological realizations. Regarding gender, two independent samples t-tests were conducted: (a) one comparing the non-aspirated realizations between male and female speakers, and (b) one comparing the aspirated realizations between male and female speakers. With $t(20.78) = 0.436$, $p > .6$, and $t(20.78) = -0.436$, $p > .6$, respectively, the results indicate that there is no statistically significant difference between males and females. On the contrary, both male and female speakers feature similar phonological behavior concerning /t/ realizations.

Sociolinguistically oriented phonological and phonetic studies (see Lyriotakis 2024, 2025, *to appear*) have shown that various social and sociolinguistic factors seem to condition the phonological variation attested in heritage MG in Toronto. These factors include the family language policy (see Lyriotakis 2025), involvement in the local diasporic community (see Lyriotakis *to appear*), and exposure to homeland or homeland-like input in MG through Saturday schools or other educational settings. However, the speakers examined in this study do not seem to differ significantly regarding the above-mentioned factors. Based on their narratives, the primary difference among these participants seems to be the presence or the absence of grandparents, and, particularly, grandmothers, during their early childhood. Therefore, the variation attested in the realizations of /t/ seems to be conditioned by this social and sociolinguistic factor.

4.3. Grandmothers: sociolinguistic profile and family dynamics

The grandmothers of third-generation heritage speakers in Toronto were first-generation immigrants from rural regions of Greece and most of them had limited formal education. They were highly active within the Greek diasporic community of Toronto, but they had limited social life outside of it, resulting in limited exposure to CE, and thus limited input in CE. Most of them were housewives, which further reduced their opportunities for verbal interaction with the broader CE-speaking environment.

Despite these limitations, these grandmothers played a key role within immigrant families, often serving as the primary caregivers of their grandchildren, a role that included storytelling and singing lullabies in MG. Beyond the evident affection for their grandchildren, their actions

demonstrate a strong commitment to heritage language and cultural maintenance, shaping thus in some cases the family language policy, namely, the ways in which languages are used and managed within the home (see King et al. 2008). Specifically, according to the narratives of third-generation heritage speakers, these grandmothers frequently managed the tensions between the minority heritage language and the dominant language within the family. As a result, they significantly contributed to decelerating language attrition, and in a few cases, even reversing for a while the shift toward the dominant CE (cf. Fishman 1991). At the same time, they helped maintain the use of heritage MG among younger generations (cf. Griva & Stamou 2014). Therefore, their presence and actions played an essential role in shaping the bilingual or multilingual repertoires of their grandchildren.

5. Discussion

Based on the data and the metadata elicited through the sociolinguistic fieldwork, I identified a key social variable, namely, the presence or absence of grandmothers within the family. Although this variable is inherently social, in this context it also functions as a sociolinguistic variable, as it seems to significantly influence language use within the family, greatly shaping the linguistic input received by third-generation speakers during early childhood. Specifically, the grandmothers in question, first-generation immigrants, born and raised in Greece, when present, mostly spoke, and continue to speak, homeland MG within the family. This consistent use of homeland MG provided a rich linguistic output, both in terms of quality and quantity, which is directly linked to the input received by third-generation heritage MG speakers.

Within this sociolinguistic framework, I examined how this variable influences the phenomenon under investigation in this study, namely, the two realizations of the underlying voiceless alveolar stop /t/. The analysis revealed three distinct patterns in the speech of third-generation heritage MG speakers. The first pattern emerges in families where only grandmothers were present, meaning that grandparents were absent from the family structure. This suggests a significant impact of grandmothers' consistent use of MG in oral interactions with their grandchildren. In the second pattern, where both (sets of) grandparents were present, the third generation's exposure to MG begins to diminish, for reasons that will be discussed later in Subsection 5.2. The third pattern appears in families where grandmothers were absent, and, therefore, only grandfathers were present, resulting in reduced intergenerational MG input for the third generation.

5.1. Pattern I: presence of only grandmothers

The speakers falling into this pattern produced a total of 456 tokens featuring an underlying /t/. Of these, 417 tokens were realized as non-aspirated [t], while only 39 tokens were realized as aspirated [t^h]. This translates to a mean ratio of 0.914 for the non-aspirated realizations and 0.086 for the aspirated realizations. Overall, the speakers in this group are mostly faithful to the homeland MG realization of /t/ as [t] (see 3a). As these ratios show, aspirated [t^h] realizations (see 3b and 3c) are rare. Within the context of phonetic transfers, these realizations appear to be influenced by the aspirated voiceless alveolar stop in CE (see Clark & Yallop 1995; Vaux 2002, among many others).

(3)	UNDERLYING STRUCTURE	REALIZATION	GLOSS
a.	/ 'ta.ksi/	['ta.ksi]	classroom.FEM.NOM.SG
b.	/ 'te.los/	['t ^h e.los]	end.MASC.NOM.SG
c.	/ 'ti.xi/	['t ^h i.çi]	luck.FEM.ACC.SG

The realizations of all speakers participating in this study are presented in Table 1, while Table 2 includes only the speakers (7, 12, 15, 19, 20, 22, 24, and 25) who were raised in the presence of grandmothers, but not grandfathers, and favor the non-aspirated realizations.

Speaker	Tokens /t/	[t] Realizations	[t] Ratio	[t ^h] Realizations	[t ^h] Ratio
7 (F, 28)	68	61	0.897	7	0.103
12 (F, 25)	49	44	0.898	5	0.102
15 (M, 20)	54	49	0.907	5	0.093
19 (M, 28)	55	52	0.946	3	0.054
20 (F, 23)	61	51	0.836	10	0.164
22 (M, 18)	48	43	0.896	5	0.104
24 (M, 25)	69	67	0.971	2	0.029
25 (F, 27)	52	50	0.961	2	0.039
Total	456	417	-	39	-
μ Ratio	-	-	0.914	-	0.086

Table 2. Number of tokens featuring an underlying /t/ and number of tokens alongside the relevant ratios for each type of realization in Pattern I

In this group of heritage MG speakers, aspirated [t^h] realizations surface in /t/+Vowel stressed syllables and, specifically, in word-initial singleton onsets of stressed syllables, as well as in word-medial singleton onsets of stressed syllables. These environments are considered phonologically salient positions (see Beckman 1997; Steriade 2001, among others). The following vowel seems to exert some influence on the emergence of aspiration, as aspirated realizations in these speakers' heritage MG seem to surface more frequently before the front vowels of MG, namely the high front vowel /i/ and the mid front vowel /e/ (see 3b and 3c, respectively). In any case, this observation warrants further phonological investigation, which goes beyond what this sociolinguistically oriented study aims to examine.

5.2. Pattern II: presence of both (sets of) grandparents

The speakers falling into this pattern provided 172 tokens featuring an underlying /t/. Of these, 104 tokens were realized as non-aspirated [t], while 68 were realized as aspirated [t^h]. The raw numbers correspond to a mean ratio of 0.651 for the non-aspirated realizations and 0.349 for the aspirated realizations, which means that nearly half of the realizations remain faithful to the homeland MG realization of /t/ as [t] (see 4a). However, a notable increase in aspirated [t^h] realizations (see 4b) is observed.

(4)	UNDERLYING STRUCTURE	REALIZATION	GLOSS
a.	/ 'ta.ma/	['ta.ma]	oblation.N.ACC.SG
b.	/po. 'te/	[po. 't ^h e]	never

Table 3 presents the speakers (1, 5, 10, 14, and 16) who were raised in the presence of both (sets of) grandparents. Although some of these speakers favor the non-aspirated realizations and others the aspirated ones, as a group shaped by the same sociolinguistic variable, they show an overall preference for the non-aspirated realizations, while at the same time presenting an increased number of aspirated ones.

Speaker	Tokens /t/	[t] Realizations	[t] Ratio	[t ^h] Realizations	[t ^h] Ratio
1 (M, 22)	33	29	0.879	4	0.121
5 (F, 21)	29	27	0.931	2	0.069
10 (M, 19)	35	7	0.200	28	0.800
14 (F, 24)	27	24	0.889	3	0.111
16 (F, 27)	48	17	0.355	31	0.645
Total	172	104	-	68	-
μ Ratio	-	-	0.651	-	0.349

Table 3. Number of tokens featuring an underlying /t/ and number of tokens alongside the relevant ratios for each type of realization in Pattern II

In this group of heritage MG speakers, aspirated [t^h] realizations occur in more positions within the word compared to Pattern I. Specifically, they surface in (i) word-initial singleton onsets of stressed syllables (see 4c), as in Pattern I; (ii) word-medial singleton onsets of stressed syllables (see 4b and 4d), which remain a salient position; and (iii) /s+t/ sequences where /s/ is a word-internal coda and /t/ is the onset of the following stressed syllable (see 4e). Regarding this third environment, in CE, despite some divergence among phonetic studies, /t/ does not seem to surface as aspirated [t^h] when following /s/, even when /t/ is the onset of a stressed syllable. Therefore, in heritage MG, the emergence of aspiration in such cases may reflect an analogical extension to phonological environments that cannot be explained as a direct influence of CE. Moreover, unlike in Pattern I, the emergence of aspiration in this group does not appear to be conditioned by the following vowel. Aspirated [t^h] realizations are attested before all five vowels of MG (/a, e, i, o, u/), suggesting that vowel quality does not seem to play a role in this case.

(4)	UNDERLYING STRUCTURE	REALIZATION	GLOSS
c.	/ 'to.te/	['t ^h o.te]	then
d.	/va.'to.mu.ra/	[va.'t ^h o.mu.ra]	blackberry.N.ACC.PL
e.	/vas.'ta.o/	[vas.'t ^h a.o]	hold.1SG.PR

In this group of third-generation speakers, homeland-like non-aspirated [t] realizations still prevail, but, as already been mentioned, the ratio of aspirated realizations [t^h] is noticeably higher. According to language biographies, speaker narratives, metadata, and acoustic data, the presence of both (sets of) grandparents seems to influence the balance of homeland MG and CE input. The differentiating factor seems to be the presence of grandfathers, also first-generation immigrants from rural areas of Greece, who tend to be more socially and professionally integrated into the CE-speaking community, primarily due to the responsibility they had when they immigrated to Canada to be the providers for the family. However, many of them consider this particular type of bilingualism, which includes a minority language, a

possible obstacle to their grandchildren's cultural accommodation and, ultimately, to their educational and employment opportunities.

In this context, while grandmothers continue to provide some homeland MG input, they often align to some extent with their spouses' attitudes and slightly reduce the use of MG within the family. As a result, the third generation receives moderate input in homeland MG, a factor that, in this study, seems to correlate with the higher, compared to Pattern I, ratio of aspirated [t^h] realizations attested in this group.

5.3. Pattern III: absence of grandmothers

The speakers falling into this pattern produced a total of 563 tokens featuring an underlying /t/. This consonant was realized as aspirated [t^h] in 473 tokens (see 5a), while in only 90 tokens it was realized as non-aspirated [t] (see 5b), that is, in a way faithful to homeland MG. This translates to a mean ratio of 0.159 for the non-aspirated realizations and a much higher 0.841 for the aspirated ones. Therefore, homeland-like realizations are very limited within this group of speakers.

(5)	UNDERLYING STRUCTURE	REALIZATION	GLOSS
a.	/ 'ko.ta/	['ko.t ^h a]	hen.FEM.ACC.SG
b.	/ 'tu.ba/	['tu.ba]	fall.FEM.ACC.SG

Table 4 presents the speakers (2, 3, 4, 6, 8, 9, 11, 13, 17, 18, 21, 23, 26, and 27) who were raised in the absence of grandmothers and favor the aspirated realizations.

Speaker	Tokens /t/	[t] Realizations	[t] Ratio	[t ^h] Realizations	[t ^h] Ratio
2 (F, 26)	57	11	0.193	46	0.807
3 (F, 18)	35	5	0.143	30	0.857
4 (M, 26)	46	10	0.217	36	0.783
6 (M, 24)	36	5	0.139	31	0.861
8 (F, 20)	44	6	0.136	38	0.864
9 (F, 24)	46	9	0.196	37	0.804
11 (M, 27)	51	5	0.098	46	0.902
13 (F, 20)	31	6	0.194	25	0.806
17 (M, 23)	18	3	0.167	15	0.833
18 (F, 26)	25	2	0.080	23	0.920
21 (F, 20)	52	5	0.096	47	0.904
23 (F, 26)	43	7	0.163	36	0.837
26 (M, 22)	46	10	0.217	36	0.783
27 (F, 20)	33	6	0.182	27	0.818
Total	563	90	-	473	-
μRatio	-	-	0.159	-	0.841

Table 4. Number of tokens featuring an underlying /t/ and number of tokens alongside the relevant ratio for each type of realization in Pattern III

From a phonological perspective, aspirated [t^h] realizations surface in more positions within the word compared to the two previous patterns. Specifically, they occur in word-initial singleton onsets of both stressed and, unlike in Patterns I and II, unstressed syllables (see 5c). They also appear word-medially in singleton onsets of stressed syllables and, again distinctively, in unstressed syllables, though less frequently (see 5a). Moreover, [t^h] realizations surface in /s+t/ sequences where /s/ does not function as a word-internal coda, similar to what is attested in Pattern II, but as an appendix, while /t/ as the onset of the first stressed syllable (see 5d). As in Pattern II, the following vowel does not seem to influence the emergence of aspiration. Aspirated [t^h] realizations occur before all five vowels of MG (/a, e, i, o, u/).

(5)	UNDERLYING STRUCTURE	REALIZATION	GLOSS
c.	/ti.'mi/	[t ^h i.'mi]	price.FEM.NOM.SG
d.	/'sti.xi.ma/	['st ^h i.çi.ma]	bet.N.ACC.SG

From a sociolinguistic perspective, this pattern is closely linked to the absence of grandmothers, which results in the predominance of attitudes that are not particularly supportive of heritage MG acquisition. Vectors of such attitudes may include (a) the parents, strikingly so, especially when both are of immigrant origin (see Lyriotakis 2025), (b) the grandfathers, as presented in 5.2., (c) the distance from the local diasporic community (see Lyriotakis *to appear*), and (d) the educators. As a result, this group of third-generation speakers features the most pronounced phonological deviations from homeland MG. Aspirated [t^h] realizations not only prevail, but they also surface in a broader range of phonological environments within the word than in any of the other two groups examined in this study.

5.4. Statistical account

To explore the impact of the presence and the absence of grandmothers on the ratios of the deviating from homeland MG realizations, namely, the [t^h] realizations, a one-way ANOVA was performed. In this context, the ratio of aspirated realizations was the dependent variable, while the independent variable was the pattern of grandparental presence, featuring the three above-presented mutually exclusive categories: (a) Pattern I: Presence of only grandmothers, (b) Pattern II: Presence of both (sets of) grandparents, and (c) Pattern III: Absence of grandmothers. The null hypothesis (H_0), as depicted in (6), was that the mean ratio of aspirated realizations is the same for all three patterns.

$$(6) \quad H_0: \mu_{\text{Pattern I}} = \mu_{\text{Pattern II}} = \mu_{\text{Pattern III}}$$

The analysis revealed a statistically significant influence of the pattern of grandparental presence, with $F(2, 24) = 71.75$, $p < 0.001$, which rejects the H_0 . This indicates that the mean ratio of aspirated realizations in at least one pattern differs from the others. A post-hoc analysis using Tukey's HSD showed that all three pairwise comparisons, namely, Pattern I – Pattern II, Pattern I – Pattern III, and Pattern II – Pattern III, display statistically significant differences, with $p < 0.001$ in all pattern pairs. Specifically, heritage MG speakers falling into Pattern I, that is, speakers raised in a family where only grandmothers were present, feature the lowest mean ratio of aspiration. Speakers raised in a family where both (sets of) grandparents were present

significantly exceed those from Pattern I, while speakers raised in families where grandmothers were absent manifest the higher mean ratio of aspirated realizations.

These results provide robust evidence that the presence or the absence of grandmothers exerts a strong influence on the variation attested in the realizations of third-generation heritage MG speakers and, particularly, on the emergence of aspirated realization of the underlying /t/.

6. Conclusion

This study examined one phonological/phonetic variable, namely, the two realizations of /t/ in the speech of third-generation heritage MG speakers in Toronto, and one social/sociolinguistic variable, namely, the presence or absence of grandmothers within the family. The findings provide clear evidence that the presence or absence of grandmothers exerts a strong influence on the development of their grandchildren's phonological competence in their heritage language. In particular, the more absent the grandmothers are, the more aspirated [t^h] realizations emerge, which are non-native to homeland MG. This trend becomes more evident in Pattern II and, especially, in Pattern III, where aspirated realizations not only increase in number but also surface in more phonological positions within the word.

In this regard, Pattern III, where grandmothers are entirely absent, is the only pattern where aspirated realizations outnumber non-aspirated ones. This pattern also includes the largest number of third-generation speakers, at least within the sample analyzed in this study. According to the participants' narratives, this is not surprising, as many of the grandparents of the third generation had either repatriated to Greece by the time their grandchildren were born or, in some cases, were no longer alive.

On a broader scale, these findings highlight the importance of considering social and sociolinguistic factors in studies of heritage language phonology and phonetics. Such studies should not be conducted in isolation from the speakers' sociolinguistic context. On the contrary, they should explore the sociolinguistic context and value each speaker's sociolinguistic background which allowed the emergence of homeland-like and non-homeland-like realizations. Examining linguistic patterns alongside the broader social and sociolinguistic environments allows researchers to better understand phonological variation and change and to analyze the complexity of the phonological systems of heritage language speakers.

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Abbreviations

FEM	feminine	SG	singular
MASC	masculine	PL	plural
N	neuter	F	female
ACC	accusative	M	male
NOM	nominative	PR	present

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Number-driven gender syncretism and Impoverishment

Some insights from Kannada

Sid Bhushan

This paper discusses how gender and number systems interact, focusing on morphological syncretisms of gender exponence in non-singular numbers. Working within the framework of Distributed Morphology, and using data from Kannada, which expresses three gender distinctions in the singular but only two in the plural, I first investigate previous analyses of gender-number syncretism. Then, I propose a refined featural specification of gender, discussing why it is necessary to capture the syncretisms present in Kannada. This refined specification is a multidimensional approach to grammatical gender, encoding gender as a set of multiple features within a feature-geometrical hierarchy.

1. Introduction

1.1. Overview

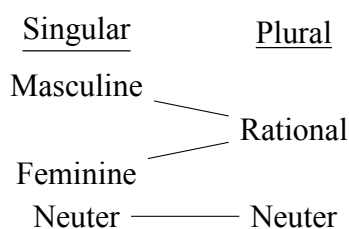
This paper will discuss the interaction between the gender and number systems of languages within the nominal domain. Specifically, I will consider the case of gender/number syncretisms, where different genders have the same exponence in certain numbers (namely, for plural nouns). I will be working within the framework of Distributed Morphology (Halle & Marantz 1993, 1994), a non-lexicalist theory of morphology that puts word formation as occurring in both the narrow syntax and at PF. Also, this proposal will be developed by analyzing gender phenomena in Kannada, a Dravidian language spoken primarily in Southern India with about 60 million users (Eberhard et al. 2025). This language has not been extensively studied in theoretical linguistics, and I will show data that both support and call into question previous analyses (Bobaljik 2002; Harley 2008; Kramer 2015, 2016, 2019) of gender/number syncretism.

1.2. Gender in Kannada

Broadly speaking, Kannada has three different grammatical genders: masculine, feminine, and neuter. These correspond to the natural gender of the things they describe, with neuter being used for inanimate objects that do not possess natural gender (Schiffman 1983).

However, in the plural, the masculine and feminine gender are said to ‘merge’ to form the so-called “rational”. Precisely, this means that the exponence of masculine and feminine forms are identical across all plural paradigms (e.g. nominal gender marking, subject-verb agreement, etc.).

This pattern is summarized in the figure below:



See Section 3 for a more detailed description of the gender system of Kannada.

1.3. Roadmap

Section 2 will present a brief overview of some previous literature in this area, specifically focusing on the elements that will be ingredients for the analysis I later present. Then, in Section 3, some data from Kannada are presented to provide a thorough description of the gender system of Kannada, which will be necessarily to contextualize the analysis. Section 4 will present the analysis itself, showing to what extent the analyses from the literature are able to account for the patterns seen in Kannada and providing a new approach to fix the shortcomings of the previous analyses. Finally, Section 5 will summarize the conclusions drawn from the analysis and briefly discuss some avenues for potential future research.

2. Theoretical Background

This section will briefly review previous literature and discuss the theoretical background necessary for the analysis presented in Section 4.

2.1. Overview of Distributed Morphology

Distributed Morphology (Halle & Marantz 1993, 1994), henceforth DM, is a non-lexicalist theory of morphology that ‘distributes’ the system of morphology across the narrow syntax and the interfaces (PF and LF). The component of the framework at LF, the Encyclopedia, will not be discussed in this paper, as the focus will be on the operations occurring in both the narrow syntax and at PF. These components of the theory are what are responsible for word formation.

Under DM, the structural aspects of word formation occur within the narrow syntax itself rather than being fed to the syntax from a central lexicon. For this reason, the theory is often referred to as a “syntax all the way down” theory. However, in the narrow syntax, no phonological information is present, with morphemes being abstract structures in the syntax. These are either roots (which are not specified for even the most basic features) and morphemes that consist of bundles of features.

Only at PF is phonological information inserted, and this occurs very late at PF. Dubbed Late Insertion, one of the core ideas in DM is that phonological material is only added after all of the structural operations are complete. This means that the entire structure is available at the point of pronunciation (subject to other constraints originating in the syntax, such as phases).

The mapping of morphosyntactic structural elements (i.e. feature bundles) to actual phonological output is governed by a set of rules called Vocabulary Items. Each Vocabulary Item (VI) contains a mapping of features to phonological material and, optionally, the context in which this VI can be applied. The final core idea of DM is that VIs are underspecified, meaning that a VI may apply to a morphemic feature bundle even if it does not have all of the features present in the bundle, as long as it does not have any features not present in the bundle. In the case where multiple VIs are eligible to be inserted, the most specific VI (the one matching the most features) is that which should be inserted, per the Subset Principle (Halle 1997).

It is also important to note that, in DM, roots are completely abstract and have no features specified. This includes category features, since the same root might be realizable across multiple different categories. Therefore, it is necessary for category features to be located somewhere else in the structure: category-forming heads. These are functional heads that select roots and project the lowest level of the word structure, within the narrow syntax. At PF, both the roots and category-forming heads can have phonological material inserted during spell-out.

2.2. Gender in DM

There has been a great deal of work on how grammatical gender can be analyzed within the framework of Distributed Morphology. In this paper, I will adopt the analysis presented by Kramer (2015), who places gender as primarily a feature on the category-forming *n* head.

This means that a language with grammatical gender contains multiple different *n* heads within its set of possible morphosyntactic feature bundles: one per grammatical gender. These *n* heads generally contain, in addition to the category feature, a gender feature. Note that the gender feature can be either interpretable or uninterpretable, depending on whether it is an instance of natural grammatical gender or arbitrary grammatical gender. Which *n* heads are present is subject to parametric variation, which is what allows for differences in the gender systems of languages. The process of assigning genders to nouns is done by licensing: each *n* head can only license a certain set of roots (allowing for overlap in cases of roots that can be exponed as multiple genders).

Gender markers on nouns can be inserted at PF by VIs that act on the feature bundle present in *n*. Gender agreement is more complex (Norris 2014; Kramer 2019), but for the purposes of this paper, I will simply assume that it occurs as the result of an Agree operation (Chomsky 2000, 2001). However, nothing in this paper will necessarily rely on this being the case, meaning this analysis can easily be extended to other theories of agreement.

2.3. Gender/number syncretisms

Syncretism is the occurrence of the same phonological form to represent several different morphosyntactic feature bundles. It occurs quite commonly when gender and number interact, with nonsingular numbers frequently exhibiting fewer gender distinctions than singular numbers (Greenberg 1966).

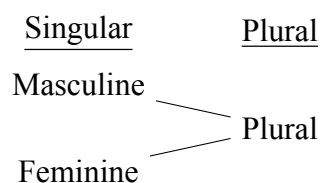
As Kramer (2019) notes, gender/number syncretism systems can be broadly categorized by whether the possible number of exponence categories for a particular gender increases, decreases, or remains constant when a noun is pluralized. This paper will focus on so-called *convergent* systems, which are those where the number of exponence categories decreases in plural number.

DM handles syncretism entirely in PF, by using underspecification of VIs (Halle & Marantz 1993; Halle 1997). Since a VI does not need to be specified for all features, it is possible for syncretisms to be the result of the same underspecified VI being applied to multiple different gender instances. For example, consider the case of French determiners (presented in Kramer 2019): determiners show gender agreement for the singular forms, but not for the plural form. The morphosyntactic feature representations retain these distinctions in all cases, but only one VI is available for the plural determiner (and it is underspecified for gender), resulting in all plural forms being spelled out the same at PF.

However, in many languages, there is syncretism present across every paradigm in the language. Kannada is an example of this type of language, as there are no paradigms (e.g. nominal gender marking, subject-verb agreement, etc.) in which a distinction between the masculine and feminine is made in the plural. Such a pattern is called metasyncretism. To explain this as repeated underspecification of VIs is somewhat unsatisfying, as it creates a duplication problem, where the same generalization needs to be specified many times in the grammar. From an acquisition perspective, this means the learner must independently acquire underspecified VIs, when it seems more likely in reality that they acquire a broader generalization.

A morphological operation called Impoverishment (Bonet 1991) can be used to motivate the repeated underspecification needed for metasyncretism (Bobaljik 2002; Harley 2008). The Impoverishment operation, which acts post-syntactically but before Late Insertion of VIs, causes features in certain contexts (specifically, certain more marked combinations of features) to be deleted. Bobaljik (2002), Harley (2008), and Kramer (2016) have all proposed the use of Impoverishment to capture gender metasyncretism. The analysis proposed by (Kramer 2015, 2016, 2019) is that Impoverishment operations exist in certain languages to remove gender features in the plural. This forces all plural VIs, across all paradigms, to be underspecified for gender, as VIs that were specified for gender would never be used during spell-out after Impoverishment, as those gender features would no longer be present in the structure visible to PF.

As an example, Kramer (2019) shows the case of Coptic, whose gender paradigm is Convergent-to-Plural, as summarized in the figure below:



A single Impoverishment operation, shown below in (1), is able to capture this generalization.

(1) **Coptic Gender/Number Impoverishment**

$$\begin{array}{ccc} [+PL] & \rightarrow & [+PL] \\ [\pm FEM] & & \end{array}$$

By removing the gender feature, the Impoverishment operation is able to motivate underspecification in every plural VI, which leads to the resulting pattern, where all masculine and feminine nouns share the same gender exponence patterns in the plural.

2.4. Application to analysis

The theoretical tools introduced in this section will be mostly assumed in the analysis for Kannada presented in Section 4. Specifically, the core assumptions of DM will not be challenged, and the approach to gender presented in Kramer (2015) will mostly be used. However, the Impoverishment operations used by Kramer (2016, 2019) to describe the Convergent-to-Plural syncretisms present in other languages will be shown to be insufficient for capturing the syncretism (or lack thereof) present in Kannada.

3. Grammatical gender in Kannada

This section will provide a detailed overview of the grammatical gender system in Kannada. The data used to provide this description comes from several sources, including both descriptive grammars of Kannada (Schiffman 1983; Sridhar 1990) and novel data. Data not cited can be assumed to be novel data collected from consultants.

3.1. Three grammatical genders

Kannada fundamentally has three grammatical genders: masculine, feminine, and neuter. These are strictly correlated with natural gender, meaning that masculine and feminine is used for male and female animates, respectively; and neuter is for all inanimates¹.

The examples in (2) show instances of words of each gender:

- (2) a. huḍuga bar-t-āne
boy come-NPST-3SG.M
b. akka bar-t-āle
sister come-NPST-3SG.F
c. talenōvu bar-ate
headache come-NPST.3SG.N

¹ This is somewhat of an oversimplification, as there are inanimates that bear gender and animates that do not. However, these are finite in number and only occur for a couple groups of items (such as celestial bodies and children). So these can be classified as animate or inanimate in Kannada specifically. Additionally, when considering human nouns, while a binary classification system is presented here, this is necessarily an oversimplification of the societal role of gender and its interactions with language.

Note that the gender for these examples is indicated through the use of subject-verb agreement, as verbs take a fusional suffix that indicates the person, number, and gender of the subject. Gender is sometimes marked on nouns, but the conditions in which it is are somewhat complex (and will be the focus of much of this section), so the markers on verbs are used for simplicity.

3.2. Gender marking on nouns

In the examples shown in (2), gender was not marked on the noun at all. However, this is not universally the case in Kannada, and gender markers are present on some nouns. Consider the examples (Sridhar 1990:157,199) in (3–5), which show instances of a noun with and without a gender marker:

- | | | | | |
|-----|----|----------------------------|----|------------------|
| (3) | a. | huḍuga-n-annu
boy-M-ACC | b. | huḍuga
boy |
| (4) | a. | Kamala-!-u
Kamala-F-NOM | b. | Kamala
Kamala |
| (5) | a. | mara-d-inda
tree-N-INS | b. | mara
tree |

As can be seen from these examples, the gender markers, when added, are inserted between the root and case suffix.

There are several different factors that influence whether a gender marker should be inserted or not. First, the specific gender/case combination is important, with only certain combinations permitting a gender marker. As an example, compare (6) and (7) (Sridhar 1990:199).

- (6) huḍuga-n-u
boy-M-NOM
- (7) mara-vu
tree-NOM

In the overt nominative case², masculine nouns mark for gender, while neuter nouns do not (the additional sound added is a phonological filler, and is distinct from the neuter marker, which is *-d-*).

Phonological properties of the root are also important, as evidenced by the data in (8) and (9):

- (8) kaḍe-yinda
side-INS
- (9) mara-d-inda
tree-N-INS

The above examples show two words with the same gender and case combination, but where the roots differ in their final vowel. It can be seen that this has an impact on whether the gender marker is inserted. Specifically, gender markers can only be inserted after roots that end in /a/ (Sridhar 1990).

² Nominative case is normally unmarked, but can be optionally marked, as seen here.

Finally, the number of the noun is also a critical factor in determining whether a gender marker is inserted, as gender markers are only ever added to singular nouns. This is evidenced by (10–12):

- | | | | | |
|------|----|----------------------------|----|--------------------------------|
| (10) | a. | huḍuga-n-ige
boy-M-DAT | b. | huḍug-ar-ige
boy-PL-DAT |
| (11) | a. | akka-n-ige
sister-F-DAT | b. | akk-andir-ige
sister-PL-DAT |
| (12) | a. | mara-d-inda
tree-N-INS | b. | mara-gaḷ-inda
tree-PL-DAT |

Each of these examples shows a singular noun with a gender marker and the corresponding noun pluralized, which causes the gender marker to no longer be exponed, even though the case/gender combination and phonological properties of the root remain the same. Note that there are two different markers that can be used to indicate the plural, depending on the root. However, this is not strictly relevant for the analysis I will present, as both block the presence of the gender marker.

3.3. Gender and number

As was just mentioned, the presence of plural number causes gender to not be exponed on nouns. Moreover, the presence of plural also causes gender syncretism across other paradigms in the language. Specifically, when considering gender-based agreement, such as the subject-verb agreement present in Kannada, masculine and feminine nouns always use the same agreement markers in the plural; this is traditionally called “rational” (Schiffman 1983). An example of this is shown in (13), cf. (2):

- | | | |
|------|----|---|
| (13) | a. | huḍug-arū bar-t-āre
boy-PL come-NPST-3PL.RAT |
| | b. | akk-andirū bar-t-āre
sister-PL come-NPST-3PL.RAT |
| | c. | talenōvu bar-ut-ve
headache.PL come-NPST-3PL.N |

In these examples, it can be seen that the subject-agreement marker on the verb is the same for the plural masculine and feminine nouns (glossed as RAT for “rational”). This occurs across all paradigms in the language. However, it should also be noted that the neuter forms remain distinct from masculine/feminine forms in all cases except for the gender markers present on the nouns themselves (where gender marking is blocked entirely in the plural).

This means that Kannada can be classified as a Convergent-to-Plural language under the classification system introduced by Kramer (2019). Importantly, however, it differs from other Convergent-to-Plural languages previously studied (Kramer 2015, 2016, 2019) in one key aspect: the system is only partially convergent, as gender distinctions do still exist in the plural. Additionally, in the nominal gender marking paradigm only, all genders have null exponence, meaning that there is fully convergent syncretism, as no gender distinctions are made.

4. Analysis

This section will present an analysis of the gender system of Kannada, specifically focusing on the syncretic agreement markers that arise in the plural. I will start by presenting an analysis adapted from previous analyses (Kramer 2015, 2016, 2019) that have been derived for the gender systems of other languages. Then, I will highlight both what this analysis does well and the issues with it that the gender/number system in Kannada raises. Finally, I present a new approach and revise the previous analysis to handle the issues raised.

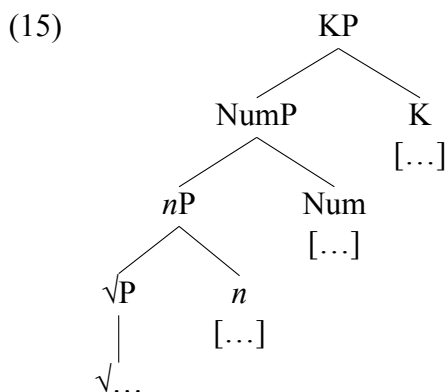
4.1. Preliminary analysis

Kannada's three-gender system with only semantically-relevant gender is not uncommon and is in fact present in many languages of the world. Based on the analysis presented in Kramer (2015) for languages with a similar gender system, I posit three different *n* heads: one per masculine, feminine, and neuter. These are listed in (14):

- (14) a. *n* *i*[+FEM]
 b. *n* *i*[-FEM]
 c. *n*

These *n* heads correspond to feminine, masculine, and neuter, respectively. The gender feature on the masculine and feminine *n* heads is interpretable, as it corresponds to actual semantic meaning (and should thus be sent to LF). Note that the neuter *n* head does not have a special neuter feature, but is rather devoid of gender features, resulting in a three-way gender distinction being derived from only a single (binary) gender feature. This is motivated by the fact that neuter nouns are semantically underspecified for gender (as inanimates cannot be semantically male nor female). Thus, it is logical to represent them by omitting gender features, rather than having a separate neuter feature, as the meaning of neuter as inanimate is derived from the fact that it is not masculine or feminine. For a further discussion on this organization of features, see Kramer (2015)'s discussion of three-gender languages, from which I have adapted this view of the featural specification.

Structurally, there seem to be three relevant projections (beyond the root level) present within the nominal domain: *n*P, NumP, and KP, which correspond to nominalization, number, and case, respectively. The basic structure is shown in (15):

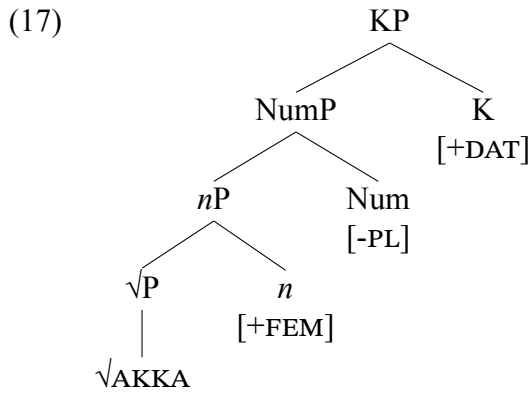


Different feature bundles for each head are combined (via Merge) in the narrow syntax to form this structure which is then sent to PF, where VIs govern the mapping of this structure to a phonological output.

To demonstrate, a derivation for the example in (16) will be shown.

- (16) akka-n-ige
sister-F-DAT

The structure for this word, as generated in the narrow syntax, is given in (17) and a list of relevant VIs is given in (18):



- (18)
- $\sqrt{\text{AKKA}} \leftrightarrow \text{akka}$
 - $[n][+FEM] \leftrightarrow \text{-n-} / \text{a} _ [-PL][+DAT]$
 - $[-PL] \leftrightarrow \emptyset$
 - $[+DAT] \leftrightarrow \text{-ige}$

The spell-out of the word then proceeds as follows:

- The root is spelled out as *akka*, by (18a).
- By (18b), the *n* head is spelled out as *-n-*, because: a $[+FEM]$ feature is present; there is an /a/ in the left context (recall that this allomorph also has a phonological trigger); and there is a $[-PL]$ and a $[+DAT]$ feature in the right context.
- The Num head is spelled out as null, by (18c).
- The K head is spelled out as *-ige*, by (18d).

This example is representative of how the spell-out works across the paradigm. Generally speaking, this means gender exponence on nouns is governed by a VI with phonological elements in its left context and a morphosyntactic case feature in its right context. Importantly, this aligns with previously made generalizations about contextual allomorphy (Bobaljik 2000), which have found that, due to the order of spell-out, phonological triggers can only be accessed for elements on the inside edge, as elements on the outside edge can only be referred to using features (since they have not been spelled out yet).

Note that I have only illustrated the example for the singular case so far. This is because the plural case is problematic for this analysis. Since Kannada has Convergent-to-Plural syncretism

across paradigms, previous analyses (Kramer 2016, 2019) would suggest that an Impoverishment is necessary to remove the gender features in the plural. Such an operation would be that listed in (19):

(19) **Kannada Gender/Number Impoverishment (Proposed)**

$$\begin{array}{l} [+PL] \quad \rightarrow \quad [+PL] \\ [\pm FEM] \end{array}$$

However, this operation cannot explain the data in Kannada. This is because there is only partial convergence in the plural syncretism across paradigms, as the neuter gender remains distinct from masculine/feminine. If the operation proposed in (19) were to occur, then all three of the *n* heads listed in (14) would be Impoverished to the same element: *n*. This means that there is no way for VIs to produce a difference between the masculine/feminine “rational” gender and the neuter gender, as the featural input to PF for all genders. Since Kannada does indeed have a contrast between the masculine/feminine and neuter in the plural, this analysis undergenerates and is thus incompatible with the data found in Kannada.

Therefore, either: (a) the featural representations of the *n* heads given in (14) is incorrect, or (b) the Impoverishment operation given in (19) is incorrect. I will argue that the featural representations must be incorrect, as there is no way for any Impoverishment operation to produce the contrasts present in Kannada. Impoverishment does not directly create syncretism but instead motivates underspecification of VIs, so the syncretism present here has to fundamentally come from underspecified VIs. However, there is no way for underspecification of VIs to create the pattern present in Kannada, if we assume the featural specification given in (14): for a syncretism between the masculine and feminine forms in the plural, there must be a VI that is specified for plural but underspecified for gender, since the gender feature is different between the masculine and feminine *n* heads. Any VI that is underspecified for gender will also always apply to the neuter gender *n* head, since it is inherently underspecified for gender in the currently proposed system, so such a VI will lead to a complete syncretism of all three genders, rather than just the masculine and feminine. Since masculine/feminine remains distinct from neuter in the plural, there is no way to capture the syncretism using underspecification, so editing the Impoverishment operation will not make the analysis more able to capture this generalization. Therefore, I instead will propose an alternative to the featural specification of the *n* heads, that will allow for an underspecification that results in the syncretisms seen in Kannada.

4.2. Revised analysis

As shown in the previous section, the approach that Kramer (2015) uses for languages with a similar gender system to that of Kannada does not work, because of the partial Convergence-to-Plural syncretism present. However, the core idea of it still seems to work, and I propose only a slight revision: instead of consisting solely of a single feature, grammatical gender in Kannada is expressed through two features: traditional gender (i.e. the masculine/feminine distinction) and animacy (i.e. the rational/nonrational distinction). Furthermore, I will stipulate that these be privative features, allowing for a markedness hierarchy to be more easily drawn, designating the two features that can be added as [FEM] and [ANIM], rather than [±FEM] as before. The feature [FEM] will only be specified for feminine nouns and [ANIM] only for animate nouns (i.e. both masculine and feminine, but not neuter). Recall that these features are interpretable since

they strictly correlate with semantic gender. Under this approach, there are still three *n* heads (for masculine, feminine, and neuter), but they differ slightly in their feature representations, as given in (20).

- (20) a. *n* *i*[ANIM][FEM]
 b. *n* *i*[ANIM]
 c. *n*

Under this approach, the neuter is completely unmarked, with no features, just as before, but now the masculine and feminine share a feature, [ANIM], with the feminine having yet another feature, [FEM].

This approach creates a feature hierarchy, where animacy sits higher than traditional gender. Such an approach to features is not novel; complex feature geometries that place features in hierarchical structures have long been used in phonological theories (see Clements 1985 for an early example of such a theory). Hierarchical approaches to feature geometries have also been proposed with regard to morphosyntax. Specifically, the approach taken here can be nicely adapted to fit the universal feature hierarchy proposed by Noyer (1992) and expanded by Harley (1994). Their approach establishes a universal hierarchy, which encodes cross-linguistic generalizations about feature relations. The hierarchy illustrated in Harley (1994) for agreement (ϕ) features does not break down gender in the way that I do so here, but it establishes that dominance relations within a certain featural slot can exist (by placing a dual number feature below a plural feature in the same position, occupying a number morpheme in the structure). This structure is based on entailment: if the presence of a feature [F] entails that of a feature [G], then feature [G] must dominate [F] in the hierarchy. Therefore, with the featural specification that I propose: since the [FEM] feature (encoding traditional gender) entails the existence of [ANIM] (as only animates can have traditional gender), then animacy must dominate traditional gender in the hierarchy. This distinction is important, as it constrains how features may be impoverished, as I will illustrate momentarily when discussing plural nouns in Kannada.

This approach has been previously suggested (Kramer 2015:121) for other Dravidian languages, but it has not been extensively explored³. Similar approaches have been proposed for other languages as well. For example, Kasenov et al. (2022) propose a similar featural specification for nouns in Shughni, but use a binary featural system instead of a privative one. Here, I propose a privative one as it emphasizes the hierarchical nature of these features, which is key to explaining why impoverishment can act to create the generalizations we see in the Kannada plural. This is because the use of privative features allows for a feature-geometric hierarchy (such as the one discussed above), or for a containment-based hierarchy (see Bobaljik 2012 for a discussion of such a system), whereas an approach based in binary features does not as easily allow for either. The system I propose here is quite similar to the approach suggested for Lithuanian by Adamson & Šereikaitė (2019), who use a privative feature hierarchy, with a [GEND] feature being common between masculine and feminine. However, as Lithuanian has arbitrary grammatical gender (see their paper for more details), they use uninterpretable gender features. In Kannada, on the other hand, gender is strictly semantically assigned, so the features should be interpretable (hence why I use [ANIM], as this corresponds to a semantic meaning). Lithuanian also does not have the same type of number-driven syncretism (Adamson & Šereikaitė 2019 in-

³ Thanks to Ruth Kramer for suggesting that the approach she proposed for Tamil might also work with the Kannada data I had collected.

investigate the featural structure through a focus on default gender instead), so looking at Kannada additionally affords an opportunity to discuss how Impoverishment would work in this system. The rest of this section will be dedicated to exploring the consequences of the approach that I have proposed above in (20), especially in the context of number-driven syncretism present.

First, note that using this set of *n* heads does not materially affect the analysis presented in Section 4.1 for the exponence of gender on singular nouns. This is because featural contrasts still exist between the different *n* heads, so they can all have different VIs used to govern their exponence. The main change is that some *ns* have a subset of the features of the other ones. For example, the features on a masculine *n*, [ANIM], are a subset of the features on a feminine *n*, [ANIM][FEM]. This means that VIs for the masculine could in theory apply to a feminine *n*. However, this does not actually occur, due to the Subset Principle (Halle 1997), which states that only the most specific VI should apply, so feminine *ns* will still be expounded with the feminine VI, as long it exists, even if the masculine VI could in theory also apply. The same would apply to neuter *ns*, carrying no gender features, which have a subset of the features of both masculine and feminine *ns* (the empty set being a subset of any set).

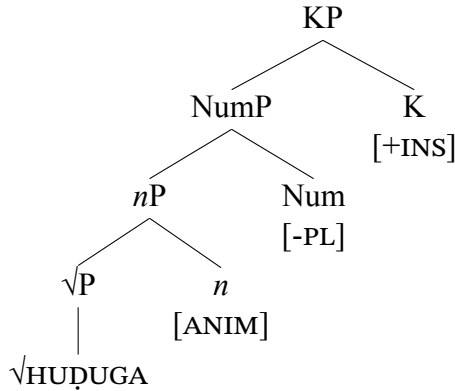
To demonstrate how this works with, a derivation for the examples in (21), a masculine noun, and (22), a neuter noun, will be shown.

(21) huḍuga-n-inda
boy-N-INS

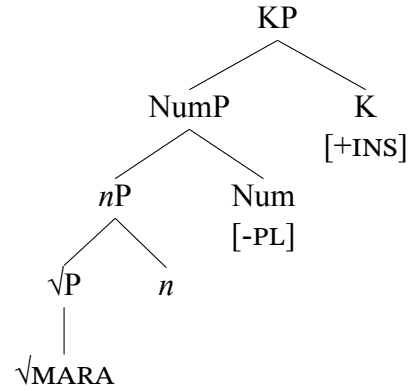
(22) mara-d-inda
tree-N-INS

The structure for these word is given in (23) and (24), respectively, and a list of relevant VIs is given in (25).

(23)



(24)



- (25)
- a. √HUḌUGA ↔ huḍuga
 - b. √MARA ↔ mara
 - c. [n] ↔ -d- / a _ [-PL][+INS]
 - d. [n][ANIM] ↔ -n- / a _ [-PL][+INS]
 - e. [-PL] ↔ -∅
 - f. [+INS] ↔ -inda

The spell-out of the masculine word, given in (21), then proceeds as follows:

1. The root is spelled out as *huḍuga*, by (25a).

2. By (25d), the *n* head is spelled out as *-n-*, because: an [ANIM] feature is present; there is an /a/ in the left context; and there is a [-PL] and a [+INS] feature in the right context. Note that, even though the features specified in (25c), the VI used for neuter nouns, are all present, it would not apply, due to the Subset Principle requiring that the most specific possible VI, (25d), be applied.
3. The Num head is spelled out as null, by (25e).
4. The K head is spelled out as *-inda*, by (25f).

The spell-out of the neuter word, given in (22), then proceeds as follows:

1. The root is spelled out as *mara*, by (25b).
2. By (25c), the *n* head is spelled out as *-d-*, because: there is an /a/ in the left context; and there is a [-PL] and a [+INS] feature in the right context. Note that the VI used for masculine nouns, (25d), does not apply, since it requires an [ANIM] feature to be present on the *n*, which is not there.
3. The Num head is spelled out as null, by (25e).
4. The K head is spelled out as *-inda*, by (25f).

We see how masculine and neuter nouns are distinguished when using this featural framework. The analysis can be extended to feminine nouns as well rather simply, mostly analogous to the masculine noun example given, where an additional VI would be present and be applied over the masculine and neuter-forming VIs due to the Subset Principle (Halle 1997).

Now consider the case of plural nouns. Under the partial Convergence-to-Plural system present in Kannada, in the plural, there is a metasyncretism between the masculine and feminine, while the neuter remains distinct. As argued in Section 4.1, this is problematic for the initial approach because the featural representation does not allow for underspecification of gender while still preserving animacy. However, this is not an issue when using the set of *n* heads from (20). A VI can be specified for just animacy and capture the distinction, since [ANIM] includes both masculine and feminine, but not neuter. Therefore, the metasyncretism can be accomplished by ensuring that all plural VIs are underspecified for traditional gender, i.e. the [FEM] feature. This means that essentially the same Impoverishment operation proposed previously (for similar languages by Kramer 2015, 2016, 2019), given in (19) can still be applied. The only adjustment is that it only needs to Impoverish [FEM], as the feature is not binary anymore; this version is given below in (26).

(26) Kannada Gender/Number Impoverishment

$$\begin{array}{ccc} [+PL] & & [+PL] \\ [ANIM] & \rightarrow & [ANIM] \\ [FEM] & & \end{array}$$

This forces all plural VIs to be underspecified for traditional gender, but not animacy, as the [FEM] feature, which was the only distinction between masculine and feminine, is no longer present in the post-Impoverishment structure.

Note that this Impoverishment operation is consistent with the idea that these two features on the noun that encode grammatical gender participate in a feature hierarchy. As pointed

out by Harley (1994), Impoverishment in a feature-geometrical approach can be thought of as delinking. As more marked features will be lower on the hierarchy since they tend to exist only in the presence of other features, and, since Impoverishment only removes certain marked feature combinations, it will never act to remove features higher on the hierarchy but leave those that are lower. This is equivalent to delinking an entire subtree off of the feature hierarchy, as opposed to removing individual features (though note that the subtree may just contain a single feature, it does not need to branch to be considered a subtree still). That matches what we see here, in the operation proposed in (26): the lower subtree of the hierarchy (which just contains the traditional gender feature) is removed, and higher features in the hierarchy (i.e. the animacy feature) are retained.

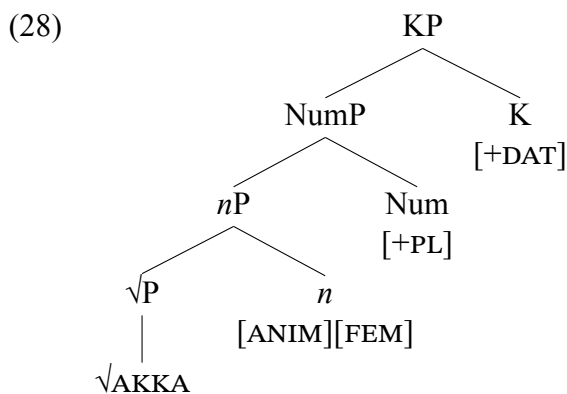
As an example, consider the subject-verb agreement paradigm. Agreement markers are functional morphemes that indicate person, number, and gender. These would be created by VIs specifying all three of these features. However, the VIs with a [+PL] feature must be underspecified for gender, as the Impoverishment operation given above results in the erasure of gender from the structure (meaning that VIs that do not underspecify would never be realizable).

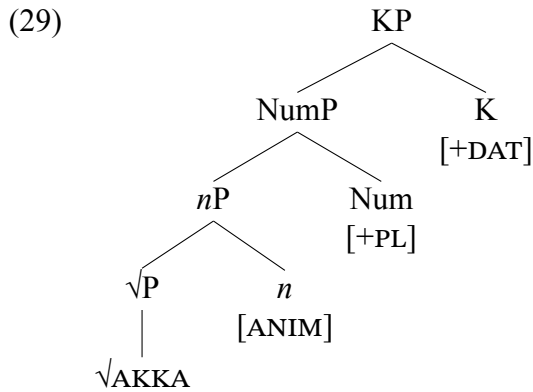
Agreement paradigms in Kannada like subject-verb agreement are easily explained by the analysis given above. However, the nominal gender marking paradigm is more complicated. This is because it is fully Convergent-to-Plural, meaning that there are no gender distinctions made at all, since all gender marking is blocked in the plural. I will analyze this as the result of the unavailability of any gender-marking VIs with plural contexts. Note that this is not motivated by Impoverishment, as it only occurs in a single paradigm and is thus not an instance of metasyncretism and can be simply explained as an underspecification in the grammar that is acquired independently by the learner, not unlike the French determiner example given in Section 2.3 (Kramer 2019).

To demonstrate, the spell-out the example given in (27), which is a plural feminine noun, will be shown.

- (27) akk-andir-ige
sister-PL-DAT

The structure of this word, as generated by the narrow syntax, is shown in (28). Then, Impoverishment is applied to the structure. While, as mentioned above, Impoverishment is not necessary/does not motivate this instance of syncretism, there is no evidence to suggest that the Impoverishment specified in (26) is limited to a particular domain. So I shall assume it applies here as well, resulting in the structure shown in (29), which is what is sent to Late Insertion.





A list of relevant VIs is given below in (30):

- (30)
- a. $\sqrt{\text{AKKA}} \leftrightarrow \text{akka}$
 - b. $[n][\text{ANIM}][\text{FEM}] \leftrightarrow -n / a _ [-\text{PL}][+\text{DAT}]$
 - c. $[n] \leftrightarrow \emptyset$
 - d. $[+\text{PL}] \leftrightarrow -\text{andir-}$
 - e. $[+\text{DAT}] \leftrightarrow -\text{ige}$

The spell-out of the word then proceeds as follows:

1. The root is spelled out as *akka*, by (30a). Note that last vowel in the root is later deleted, but this is a strictly phonological process (vowel hiatus is prohibited in Kannada), and is thus not relevant.
2. The VI in (30b) cannot be applied, as the *n* head both does not have a $[\text{FEM}]$ feature specified and does not have a $[-\text{PL}]$ feature in its right context (either of these would disqualify the VI, so this is not definitive evidence for the Impoverishment of $[\text{FEM}]$ necessarily occurring in this context). There is no VI in the language that contains the specific featural specification present in the structure, but a VI with fewer features specified can be applied instead, as long as a more specific one is not available (the Subset Principle, Halle 1997). This is the one given in (30c) and causes the *n* head to be spelled out as $\emptyset$.
3. The Num head is spelled out as *-andir-*, by (30d).
4. The K head is spelled out as *-ige*, by (30e).

Note that the VI used to spell out the *n* head in this case is completely devoid of all other features and of any phonological or morphosyntactic context. This means that this VI can be used for any *n* head, but will only be applied as a last resort if no other VI is available.

Importantly, this means that this VI can also be used to explain cases where gender marking is blocked for phonological reasons, such as in (8), repeated below as (31), where the gender marker is only blocked because the root does not end in /a/.

- (31) *kaḍe-yinda*
side-INS

The fact that this can be done is a point in support of DM more broadly, as it demonstrates the power of underspecification in reducing the number of language-specific rules a learner must acquire.

5. Conclusion and future work

5.1. Summary

This paper introduced some of the literature on gender/number syncretisms through the lens of the Distributed Morphology framework, and introduced new insights from Kannada that both supported and highlighted some issues with the previous approaches.

In Section 2, a brief overview of previous literature was given. Section 3 presented a detailed overview of the gender system of Kannada, and served as the basis of the analysis presented. Specifically, it introduced the fact that Kannada has a novel type of gender syncretism that had not been previously studied extensively: partial Convergence-to-Plural.

Section 4.1 then presented a preliminary analysis based on the previous work. The analysis was able to properly account for the data in the singular, but had issues accounting for the partial convergence present in the plural. So, in Section 4.2, a new analysis was presented, revising the previous analysis to better account for the partial convergence seen in Kannada.

5.2. Future questions

There are still several open questions left by the analysis presented. In this section, I will briefly discuss one of the larger questions and hint at the beginnings of potential answer.

The exact domain of the Impoverishment operation remains somewhat unclear. The analysis presented here glossed over the issue, simply stating that [FEM] is Impoverished (and [ANIM] is not) when present with [+PL]. However, this begs the question of what exactly does “present with” mean. There are actually two different structures on which Impoverishment has been assumed to act. In the agreement paradigms, the plural and gender features occupied the same terminal, since fusional exponence was present. In the nominal gender-marking paradigm, on the other hand, gender and number were marked as separate morphemes and thus Impoverishment operated across terminals (though it is not necessarily the case that Impoverishment needed to be used in the nominal gender-marking paradigm, as the correct predictions are still made for the data even if it does not). So it seems possible that Impoverishment can act on elements not within the same terminal, though the data presented here do not provide evidence to whether or not this is the case. However, even if it does act outside of a single terminal, it clearly has some limits, as the usage of any plural noun in a sentence does not cause gender marking to converge everywhere in the sentence. Thus, the question is raised as to what exactly the domain of Impoverishment is.

One potential solution is that Impoverishment is constrained to within a phase. While the phase structure of Kannada has not been analyzed in detail, Kannada has been analyzed with regard to Bošković (2008)’s NP/DP parameter and argued to not possess a D-layer (Dees 2023). Therefore, under the theory of phases given by Bošković (2014), KP constitutes a phase, as it is the highest projection in the nominal lexical domain as no D-layer is present. This means that Impoverishment in Kannada seems to be limited to acting within a phase, or more specifically, within the spell-out domain of a phase. This solution seems promising, as justifying Impoverishment to act across phase spell-out domains would be difficult to do, assuming that it operates at the beginning of spell-out.

5.3. Conclusions

In this paper, I have brought to attention a novel type of gender/number metasyncretism that occurs in Kannada but has not been previously studied: partial convergence. I then tested how well previous approaches (Bobaljik 2002; Harley 2008; Kramer 2015, 2016, 2019) within the framework of Distributed Morphology (Halle & Marantz 1993) handle this new type of syncretism. Overall, they do seem to work quite well for Kannada, and DM works quite well to explain many of the syncretisms present in Kannada. There were some issues with the previously argued for feature specification of *n* (Kramer 2015), but this paper was able to fix those issues with relatively minor revisions (while the features are reorganized into a more complex hierarchical structure, this does not fundamentally change the mechanisms involved, but simply allows for a more elegant view on how these operations might work). In fact, as the featural specification of *n* is argued to be a source of parametric variation (Kramer 2015), the revisions proposed in this paper are not necessarily contradictory at all to the previous work, but just show that there is more to consider when studying languages that had not been previously analyzed.

Acknowledgements

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Abbreviations

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The left periphery in Bavarian

Analysis of the *Emphatic Topicalisation* through the lens of the *Doubly-filled COMP*

Monica Menegon

This study investigates the structural position of simple *wh*-elements in a construction of the Bavarian left periphery, the *Emphatic Topicalisation* (ET). Following Weiß & Strobel's (2018) proposal that there are correlations between different syntactic phenomena, the *Doubly-filled COMP* (DFC), another Bavarian structure, was analysed through data of the Zwirner-corpus. The results, supported by a comparison with other Germanic dialects and varieties, indicate that simple *wh*-items can co-occur with complementisers, suggesting they occupy SpecFinP rather than a head position. This leaves SpecTopP available for the extracted constituent in the ET.

1. Introduction

Bavarian is characterised by some specific syntactic phenomena in the left periphery of the sentence. A prominent structure is the *Emphatic Topicalisation* (ET), namely the fronting of an XP to the left of a lexical complementiser, which is possible only if the embedded sentence is itself fronted. This phenomenon, first discussed by Bayer (1983) and Felix (1985) and later examined by Weiß (1998), Bayer (2001) — who refers to it as *Emphatic Topicalisation* — and Grewendorf (2014, 2015) — who terms it *Bavarian Extraction* (BE) — among others, is illustrated in example (1):

- (1) Den wenn i dawisch, daschlog i.
he.ACC if I.NOM catch kill I.NOM
'If I catch him, I will kill him.'

(Bavarian; adapted from Grewendorf & Weiß 2014:12)

While it is present in most spoken Southern German varieties, Standard German does not allow this extraction in verb-final embedded sentences: a sentence as (2a) is not possible in the standard language. The emphasis effect can be obtained in German through Hanging Topic constructions, as in (2b), which have, however, not the same syntactic structure as Bavarian ETs.

- (2) a. *Den_i wenn ich t_i sehe!
 he.ACC if I.NOM see
 ‘If I see him!’
- b. Den Hans_i, wenn ich den_i sehe!
 the.ACC Hans if I.NOM he.ACC see
 ‘Hans, if I see him!’

(Standard German; Lutz 2014:114)

According to most scholars (see Weiß 1998; Bayer 2006; Grewendorf 2014, 2015), ETs can interact with embedded *wh*-interrogatives. In this context, however, only the extraction from simple *wh*-elements is accepted by speakers (even in co-occurrence with the complementiser *dass* ‘that’), while it is considered ungrammatical if the embedded clause is introduced by a complex element, cf. (3a–b).

- (3) a. An Sepp wer (dass) gseng hod, woäß i ned.
 the.ACC Sepp who.NOM that seen has know I.NOM not
 ‘I do not know who has seen Sepp.’
- b. *Den Kaas welcher Lehrer dass vazapft hod mecht i
 the.ACC cheese which.NOM teacher that told has want I.NOM
 wissen.
 know.INF
 Intended: ‘I would like to know which teacher has told that nonsense.’

(Bavarian; adapted from Grewendorf 2014:168)

Various approaches have addressed these less investigated constructions and there remains an ongoing debate regarding whether simple *wh*-items function as complementisers or occupy a different position, an analysis, which could also explain the possible co-occurrence with a complementiser, as in the previous example.

The present study aims to analyse and determine the syntactic position of these simple *wh*-elements in ET constructions, diverging, especially in its methods, from previous approaches. In spirit of the idea suggested by Weiß & Strobel (2018) that there are correlations between different syntactic phenomena, especially in the left periphery of the sentence, it attempts to combine the two structures of the ET and of the Doubly-filled COMP (DFC), namely the co-occurrence of a *wh*-element and a complementiser, analysing on the Bavarian Zwirner-corpus the occurrences of DFC in order to better understand the position of said elements in ETs. The gathered data will then be compared to examples from other German and Bavarian varieties, which also exhibit DFC structures.

In the following sections, I will provide a more detailed description of the ET and its properties. I will then examine previous approaches to this construction, with particular attention to the position and nature of *wh*-elements. This section will be followed by a presentation of the corpus analysis, and consequently of the DFC structure, accompanied by some selected examples from the corpus, and finally a potential representation of the position of *wh*-elements in the structure of the ET.

2. Properties of the ET

2.1. Extraction of an XP in an embedded clause

The first property of the ET is the extraction of an XP in a verb-final clause, namely the A'-movement of an XP to the left of a complementiser or, as in example (3a) in the previous section, of a simple wh-phrase in an embedded clause.

The elements, which can be extracted, are not only NPs, but can also belong to other grammatical categories. Examples of extracted PPs (4a), VPs (4b), AdjPs (4c) and AdvPs (4d) are also attested in the literature on ET (see Weiß 1998; Grewendorf 2015).

- (4) a. An d'Wand wennsd'n wirfsd, helf's gor nix.
 at the-wall.ACC if-you.NOM-he.ACC throw help-it at-all not
 'It doesn't help at all if you throw him at the wall.'
- b. Dawischn wenn'e'n dua, gejd's eam schlechd.
 catch if-I.NOM-he.ACC do, go-it he.DAT bad
 'If I catch him, he will be in trouble.'
- c. Zornig wenn'a wird, wird's grausam.
 angry if-he.NOM become become-it terrible
 'If he gets angry, it gets terrible.'
- d. Gesdan daß'a scho kema waar, daad'me wundan.
 yesterday that-he.NOM already come was, did.SUBJV-me.ACC amaze.INF
 'I would be surprised that he had already come yesterday'
- (Bavarian; Weiß 1998:39)

Excluded from the movement are both non-contrastive elements, for instance the weak pronouns 'it' or *man* 'one', and high adverbs such as *leider* 'unfortunately' (see Bayer & Dasgupta 2016), as in (5), and wh-phrases (6).

- (5) *Man bis dass kummd is d'Suppn scho koid.
 IMP until that comes is the-soup.NOM already cold
 Intended: 'By the time one arrives, the soup is already cold.'
- (Bavarian; Lutz 2014:122)
- (6) *Wen wann-a siegd, derschlogt-a'n?
 who.ACC if-he.NOM sees slays-he.NOM-he.ACC
 Intended: 'if he sees whom, is he going to beat him?'
- (Bavarian; adapted from Lutz 2014:123)

By contrast, quantifier phrases can be extracted and moved to the left of a complementiser in an ET construction (7a–b):

- (7) a. Neamd wenn kimmt, bin i a zfriedn.
 nobody.NOM if comes am I.NOM also satisfied
 'If nobody comes, I am also satisfied.'

- b. Koa Gams wenn i schiaß, macht's ma a nix.
 No.ACC chamois if I.NOM shoot makes-it me.DAT also nothing
 'If I don't shoot any chamois, I don't care.'

(Bavarian; Grewendorf 2014:156)

The structural position of the extracted XP in ET constructions has been, and still is, subject of considerable scholarly debate. Stechow & Sternefeld (1988) argue that the target position of the extracted XP is within the left periphery of the main clause. One of the arguments in favour of their claim is the gap licensed in the matrix clause in some ET structures. Felix (1985) states that the gap in the matrix clause is a parasitic gap and, therefore, the extracted XP must be in the matrix clause, to provide a binder for this gap. An additional point supporting this idea is that, according to some scholars (see Weiß 1998), ET in embedded *wh*-interrogatives is subtly restricted to some contexts. Normally, in *wh*-interrogatives, the *wh*-element takes scope over the whole embedded sentence, however, in the ET, a focalised XP is extracted and, consequently, removed from the scope area. This XP extraction generates a structural conflict, which is avoided if the *wh*-element refers to circumstances (i.e. *wie* 'how', *wann* 'when', *wo* 'where'), as exemplified in the following sentences (8a–b).

- (8) a. Da Hans wann (daß) kimd, woäß'e ned.
 the.NOM Hans when that comes know-I.NOM not
 'I don't know when Hans comes.'
- b. ?* Da Hans wen daß mog, woäß'e ned.
 the.NOM Hans who.ACC that likes know-I.NOM not
 'I don't know who Hans likes.'

(Bavarian; adapted from Weiß 1998:37)

These theories posit a focal position in the pre-prefield (*Vor-vorfeld*)¹ of the matrix clause to host the extracted XP, while the *wh*-element is assumed to occupy the specifier of CP.² While this analysis is coherent within the framework employed by these scholars, I adopt the assumption, following Bayer (2001), Bayer & Dasgupta (2016) and Grewendorf (2014, 2015), that the extracted XP in ETs remains in the embedded V-final clause for several reasons. Firstly, the extracted XP, although not necessarily stressed, is prosodically integrated in the embedded clause (9a), contrarily to the Hanging Topic (both in Bavarian and in Standard German), as in (9b). There is, in fact, no prosodic break between the XP and the lexical complementiser of the embedded clause (see Bayer 2001; Lutz 2014).

- (9) a. Den Hans_i → wann-i t_i derwisch'!
 the.ACC Hans if-I.NOM catch
 'If I catch Hans!'

¹ The pre-prefield is a syntactic field often used in the so-called *Felderanalyse* (fields analysis) common in German syntax theories. It is located before the prefield (*Vorfeld*) and is activated in the case of constructions such as Left Dislocation or Hanging Topic (Wöllstein-Leisten et al. 1997; Tomaselli 2003).

² For a more detailed explanation of this framework and of the reasons concerning the positioning of the extracted XP in the matrix clause, refer to Stechow & Sternefeld (1988) and Weiß (1998).

- b. Den Hans ↓ wann-i den derwisch'!
 the.ACC Hans if-I.NOM he.ACC catch
 'Hans, if I catch him!'

(Bavarian; Lutz 2014:116)

Secondly, the German, and consequently also Bavarian, left periphery cannot host more than two overt elements in main clauses,³ which then, within a split-CP hypothesis (Rizzi 1997), occupy SpecTopP and SpecFinP, with no overt realization of SpecFocP. As from the examples in (10), only one further element can be in the left periphery with the left dislocated item, for instance the resumptive pronoun (10a) or another element like a temporal adverb (10b) but not both (10c).

- (10) a. [Den Studenten], [den] hat Maria gestern geküsst.
 the.ACC student he.ACC has Maria.NOM yesterday kissed
 b. [Den Studenten], [gestern] hat Maria den geküsst.
 the.ACC student yesterday has Maria.NOM he.ACC kissed
 c. *[Den Studenten], [den] [gestern] hat Maria geküsst.
 the.ACC student he.ACC yesterday has Maria.NOM kissed
 'The student, yesterday Maria kissed him.'

(Standard German; Grewendorf 2015:235)

In Bavarian, even the embedded clause in ET constructions can undergo left dislocation (11):

- (11) [₁An Ratzinger] [₂dass nehman]_j, [₃des]_j hätt i ned denkt.
 the.ACC Ratzinger that accept.3PL this have.SBJV I.NOM not thought
 'I would not have expected that they elect Ratzinger.'

(Bavarian; adapted from Grewendorf 2015:236)

Given the abovementioned observations on Standard German and Bavarian, it can be argued that the extracted XP, namely *an Ratzinger* 'the Ratzinger', is in the embedded sentence. As a matter of fact, both the SpecFinP and the SpecTopP of the main clause are occupied by the resumptive pronoun and the embedded clause respectively and, therefore, there is no structural position available for the extracted ET-constituent. Besides, the resumptive pronoun *des* 'this' refers to the constituent formed by the dislocated sentence and the extracted XP.

Finally, as other constituents, even the combination of embedded clause and extracted XP can be moved and topicalised, as illustrated by the example in (12), forming, therefore, a constituent (see Grewendorf 2014, 2015).

³ Examples from both Standard German and Bavarian show that the varieties behave similarly with respect to main clauses, with only a few exceptions to V2 (i.e. Left Dislocation or Hanging Topic constructions). In Holmberg's (2015) V2 typology, they are classified as C-V2 languages, in which V2 is a root phenomenon. For a more detailed analysis of the left periphery, see Weiß (2023) for German and Bavarian (see also §4.4) and Poletto (2002) for accounts of V2 within Rizzi's (1997) split-CP framework.

- (12) [De Mass_i wenn er t_i no drinkt]_j glaabd da Peter, [t_j is
 the.ACC liter if he.NOM still drinks thinks the.NOM Peter is
 a bsuffa].
 he.NOM drunk
 ‘Peter thinks he will be drunk if he drinks one more liter.’

(Bavarian; Grewendorf 2015:236)

Hence, for this study, I will consider the extracted XP as part of the embedded clause. This claim will be relevant for the analysis of the ET and its *wh*-elements I will suggest, as it is assumed that in ET structures there is (at least) a double filling of the left periphery. In fact, Bavarian, as will also be shown in the following paragraphs, allows these constructions, which do not respect the Doubly-filled-COMP-filter.

2.2. Fronting of the embedded clause

An additional property of the ET is that the embedded clause, from which the extraction of the XP takes place, must occupy the left periphery of a clause with root properties. Clausal pied piping of the embedded clause is obligatory for both argument (13a) and adjunct clauses (13b). In its absence, the sentence becomes ungrammatical.

- (13) a. *I woaß ned, [an Hans] [ob i no amoi wähl].
 I.NOM know not the.ACC Hans if I.NOM once more vote
 ‘I don’t know yet whether I will vote for Hans again.’

- b. *I bin bsuffa, [de Mass] [wenn i no drink].
 I.NOM am drunk this.ACC liter if I.NOM still drink
 ‘I will be drunk if I drink one more liter.’

(Bavarian; Grewendorf 2015:233)

If the embedded clause is an argument, extraction of an XP to the left periphery of the matrix clause, while the embedded clause stays in situ, is possible (14a). This extraction is, however, not allowed if the embedded clause is an adjunct (14b).

- (14) a. [An Hans]_i woaß i ned, [ob i t_i no amoi wähl].
 the.ACC Hans know I.NOM not if I.NOM once more vote

- b. *[De Mass]_i bin i bsuffa, [wenn i t_i no drink].
 this.ACC liter am I.NOM drunk if I.NOM still drink

(Bavarian; Grewendorf 2015:233)

Among others, Weiß (1998) argues that a requirement for ET is the fronting of the embedded clause. For this reason, the sentence in (14a) does not constitute an instance of ET, but rather of successive cyclic movement into the matrix clause, which is not available for adjunct clauses due to their island status (see Grewendorf 2015).

According to most analyses, ET and consequently fronting of the embedded clause is licensed in the C domain of a root clause. Therefore, ET is acceptable in the case of root-like embedded V2 clauses, which are argument of so-called bridge verbs (15).

- (18) [Wenn der Student Geld hat], [dann] kauft er sich ein Auto.
 If the student money has then buy he himself a car
 ‘If the student has some money, then he will buy himself a car.’
 (Standard German; Grewendorf 2014:151)

This example supports the claim that, in ETs in adverbial clauses, the SpecFinP position can host an empty operator. It is worth noting that when the SpecFinP is occupied by an overt constituent, the gap in the matrix clause is not licensed, and thus a resumptive pronoun is required (19a–b).

- (19) a. [An Hans_i wenn i_ti dawisch], daschlog i_i e_i mi’m Hacke.
 the.ACC Hans if I.NOM catch kill I with-the.DAT ax
 b. *[An Hans_i wenn i_ti dawisch], mi’m Hacke daschlog i_i e_i.
 the.ACC Hans if I.NOM catch with-the.DAT ax kill I
 ‘If I catch Hans, I will kill him with the ax.’
 (Bavarian; Grewendorf 2014:176)

Conversely, fronted argument clauses cannot occupy a position left of SpecFinP, unless they are left-dislocated. They are located in SpecFinP, which cannot host the empty operator and, consequently, the matrix gap is not licensed. The ungrammaticality of sentences such as (20) proves this assumption.

- (20) *[An Sepp_i wer dass t_i bschissn hod], hob i_i e_i gfrogt.
 the.ACC Sepp who.NOM that cheated has have I asked
 Intended: ‘I have asked Sepp who has cheated him.’
 (Bavarian; Grewendorf 2014:177)

The gap in the matrix clause is, therefore, of pronominal nature, in that it shows similar properties of topic drop in Standard German (see Trutkowski 2011): (i) both topic drop and ET are possible with prepositional phrases, (ii) only salient discourse entities can be dropped, and the extracted XP in ETs is a salient element, and (iii) similarly to topic drop, which is restricted to verb second clauses, the matrix gap in ETs is licensed only if the matrix clause is V2.⁵

3. Previous approaches to the ET

In this section, two approaches to the ET will be outlined. These two accounts show some similarities and are, therefore, not incompatible. They both consider the source of ET to be an uninterpretable feature licensed in a root context, which allows both the movement of the XP and the pied piping of the embedded sentence. For Bayer (2001) and Bayer & Dasgupta (2016) this feature is connected to emphasis, and, for this reason, they label this phenomenon ‘Emphatic Topicalisation’, while Grewendorf (2014, 2015) argues that the structure is a variant of topicalisation and names it ‘Bavarian Extraction’ (BE). However, regarding the position of wh-elements in the structure, the two approaches diverge.

⁵ For a more detailed analysis of the reasons why the matrix gap is not a parasitic gap, its nature, and licensing refer to Grewendorf (2014, 2015).

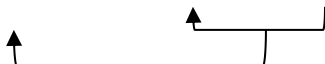
3.1. 'Emphatic Topicalisation' (Bayer 2001; Bayer & Dasgupta 2016)

The central feature for Bayer's (2001:14) analysis is '*emphasis*' since, in ET structures, the extracted XP is stressed but appears to be semantically devoid of topic or focus features. A feature [etop], which is a root feature that encodes illocutionary content, is located in C, if the language permits it, and causes an XP, which bears the same [etop] feature, to move to SpecCP. One parametric difference between Standard German and Bavarian concerns the possibility for complementisers to carry the [etop] feature: While in Standard German the feature may be associated only with a zero head, in Bavarian it can be associated with a series of overt complementisers, such as *dass* 'that', *ob* 'if', *wenn/wann* 'when/if', and *wia* 'how' (see Bayer 2001:17).

In order to understand the ET structure and, specifically, the movement of XP and the subsequent pied piping of the embedded sentence, it is necessary to consider the [etop] feature within the framework of the left periphery proposed by Rizzi (1997). In this account, the C-system is an interface mediating between a propositional content and the superordinate structure. In the case of a subordinate clause, the C-system mediates between the subordinate clause and its superordinate clause, whereas in a root clause, its highest position mediates between the root clause and the discourse. Therefore, it is within the root domain that ForceP is activated, the highest projection of the C-system, which encodes illocutionary content. Thus, since the [etop] feature is connected to the illocutionary force of the utterance, it must be placed in the highest projection of the root clause, ForceP.

Therefore, the formal feature [etop], associated with a series of complementisers, is inserted in C, although it is not interpretable in that position, given the lack of a force projection in the CP of the embedded clause. This feature subsequently attracts an XP for checking, which in turn loses its corresponding [etop] feature. The [etop] feature, however, remains on the embedded clause. Yet, given that it cannot be interpreted within an embedded C, the entire embedded clause must move to the specifier of the root clause in order to check it within the force system of the root domain. Consequently, pied piping becomes obligatory both to make the feature interpretable, and thus visible (see the *Principle of Full Interpretation* by Chomsky 1986), and to enable [etop]-checking in contexts where extraction from adjunct clauses would otherwise be blocked by the *Adjunct Condition*. Contrarily to other scholars and the present work, Bayer (2001) considers cases of successive cyclic movements out of argument clauses (see 14a) instances of ET, in which only the root CP, and not the embedded C, possesses the [etop] feature. The difference between the two structures, and namely movements, can be exemplified in the following scheme (21) (from Bayer 2001:25):

- (21) a. The *Form Chain* option
 [rootCP_{etop} ... [CP ... XP_{etop} ...]]

 b. The *Pied-Piping* option
 [rootCP_{etop} ... [CP_{etop} ... XP_{etop} ...]]


Bayer & Dasgupta (2016) build on this theory and develop a more detailed analysis of the [etop] feature, taking into account the version of probe-goal agreement proposed by Pesetsky & Torrego (2007) (see Bayer & Dasgupta 2016; Bayer 2019).

When considering ET constructions in the context of embedded wh-interrogatives, Bayer argues that the position of simple wh-elements is the same of complementisers, namely the head of CP. This idea comes from an analysis carried out by Bayer & Brandner (2008) and Bayer (2014) on another construction which can be found in Bavarian, the Doubly-filled COMP. Based on acceptability judgements collected through a questionnaire from 8 to 15 informants per dialect, the scholars draw a distinction between different categories of wh-elements, which in turn form a hierarchy with respect to DFC effects: (i) complex wh-elements, which are always accompanied by a complementiser, (ii) simple word-size wh-elements, which never co-occur with a complementiser, and (iii) word-size yet structurally complex wh-elements, such as *wieviel* ‘how many’, which are both found with and without the complementiser (see §4.1). This hierarchy is adopted in the analysis of ET, as simple wh-elements attested in such contexts possess an inherent latent C-feature that, when activated, allows their movement to C⁰. Consequently, only simple wh-elements are expected to appear in ET constructions. However, a problem for this analysis is presented by sentences such as (3a) here repeated as (22), which are frequently accepted by speakers despite having both a simple wh-element (*wer* ‘who’) and an overt complementiser (*dass* ‘that’):

(22) An Sepp **wer** (**dass**) gsehg hod, woß i ned.

The issue is addressed by assuming the adjunction of the wh-element to a lexical C head (the complementiser), since these simple wh-expressions can be C-heads (see Lutz 2014:137):

(23) [CP[An Sepp]_i [C' [C *wer*]_j *dass*] [_{tj} _{ti} gsehg hod]

3.2. ‘Bavarian Extraction’ (Grewendorf 2014, 2015)

Grewendorf (2014, 2015) claims that the BE is a variant of topicalisation and can be analysed with the existing mechanisms responsible for the licensing of topic and focus. BE is, in fact, triggered by an uninterpretable feature on the BE-constituent, the extracted XP, which must be moved to the edge of a phase head in order to agree with a head in the CP of a matrix clause. In line with Grohmann’s (2003) *Anti-Locality Principle* — which prohibits movement within the same ‘prolific domain’ — an XP moved to the left periphery of the embedded clause cannot enter into an Agree relation with the left-peripheral head of that same clause. Instead, agreement must be established interclausally, specifically with the left periphery of the next higher clause, namely the matrix clause. This relation may be derived either through successive cyclic movement or via the fronting of the entire embedded clause. Thus, it is the necessity to establish this Agree relation that motivates both the movement of the XP (BE-constituent) and the fronting of the embedded clause.

Therefore, BE is analysed as follows: an XP within an embedded clause bears a discourse-semantic peripheral feature (topic or focus) and an uninterpretable feature, which makes it active and accessible to syntactic computation. Crucially, because this XP resides within the domain of a phase head, it must move to the phase edge in order for its uninterpretable feature to be valued through an Agree relation with a higher probe in a subsequent phase, as argued in Chomsky’s (2008) *Phase Impenetrability Condition*. Once at the phase edge, however, the BE-element cannot move to the left periphery of the matrix clause to license its feature due to the Adjunct Condition, which holds in Bavarian. In contrast, extraction from argument clauses via successive cyclic movement to the matrix left periphery is permitted, as mentioned previously.

Fronting of the embedded clause is thus required because the unvalued feature of the XP, which is located in SpecFinP of the embedded sentence following extraction, cannot be accessed by the probe in the left periphery of the matrix clause. To resolve this, the embedded clause must raise to the edge of the matrix FinP phase so that the unvalued feature on the extracted XP can be checked by the probe in the left periphery of the main clause. After the embedded adverbial clause is fronted, the BE-element cannot move to the matrix, in fact moved elements often exhibit opacity to further syntactic operations. In this analysis, then, both the target position of the BE-element and of the embedded clause is the specifier of FinP, while the licensing head is the Top of the matrix.⁶

Following this analysis, in BE constructions involving embedded interrogatives, the *wh*-element apparently cannot occupy SpecFinP, as this position is already filled by the BE-element. However, according to Grewendorf (2015), such BE constructions diverge from ‘standard’ cases and therefore call for a distinct analysis. The underlying assumption of this analysis is that Standard German allows the co-occurrence of two phrases in the left periphery, namely a fronted *wh*-element and a left-dislocated XP preceding it, the latter obligatory resumed by a pronoun, as illustrated in (24a–b).

- (24) a. [Den Hans]_i wer hat den_i gesehen?
 the.ACC Hans who.NOM has him.ACC seen

- b. *Den Hans, wer hat gesehen?
 the.ACC Hans who.NOM has seen
 ‘As for Hans, who has seen him?’

(Standard German; Grewendorf 2015:247)

Consequently, Grewendorf (2015) assumes that in embedded interrogatives the BE-element targets the specifier of TopP, while the simple *wh*-element is located in SpecFinP. Supporting evidence for this analysis — and for the difference between the BE structures — is that BE from interrogatives is ruled out with quantifiers, in contrast to BE from complementiser clauses, as example in (25) compared to (7a–b) above.

- (25) * [Neamd wer (dass) gseeng hod], mecht i wissen.
 nobody.ACC who.NOM that seen has want I.NOM know.INF
 Intended: ‘I want to know who has seen nobody.’

(Bavarian; adapted from Grewendorf 2015:248)

The impossibility of BE from interrogatives introduced by a complex *wh*-element can be attributed to the theoretical assumption that such *wh*-phrases require licensing by a Top-head. In these cases, however, the Top-head is already responsible for the licensing of the BE-element. Given that German does not allow recursive TopPs, the co-occurrence of a BE-element and a complex *wh*-item within the same construction is ruled out.

BE out of interrogative clauses is analysed as an example of left dislocation, however, the resumptive pronoun is absent in the structure. Considering that long extraction out of a *wh*-island is more accepted if it is introduced by a simple *wh*-element and not by a complex one, and that resumptive pronouns are a consequence of locality, Grewendorf (2015) assumes that the local domain created by simple *wh*-elements is not as impenetrable compared to the one created by complex *wh*-phrases.

⁶ For a more detailed analysis and the corresponding tree structure see Grewendorf (2015:239).

This approach highlights a structural difference between Standard German and Bavarian, specifically within the CP-domain of embedded clauses: unlike Standard German, Bavarian complementisers are merged in a lower position, in Fin^0 . This lower placement makes it possible for specifier positions, which are integrated to the clause and licensed by a clause-internal Top, to appear to the left of the lexical complementiser.

4. Analysing the ET through the Doubly-filled COMP

The primary objective of the following section is to analyse the ET in embedded interrogatives with simple wh-elements, with particular focus on the structural position of these elements. To this end, another phenomenon of the Bavarian left periphery is taken into consideration: the Doubly-filled COMP (DFC). I will present an analysis of DFC occurrences based on data from the Zwirner-corpus, followed by a comparative evaluation of similar patterns in other German dialects and in Germanic, i.e. Southern Bavarian, varieties spoken in Northern Italy. These empirical findings will then inform a structural representation of the ET, especially concerning the syntactic position of wh-elements in embedded interrogative clauses.

4.1. Doubly-filled COMP (DFC)

Analogous to the ET, the DFC effect is a left-peripheral phenomenon attested in Bavarian and some other Germanic varieties but absent in the standard language. As the name suggests, it consists of a doubly filled CP in embedded wh-interrogatives and relative clauses — that is, a complementiser phrase in which the head position is filled by a lexical complementiser and the specifier hosts a wh-element. In Bavarian, the attested complementisers are *dass* ‘that’ for V-complementation in embedded wh-clauses and *wo* ‘where’ for N-complementation in relative clauses, as illustrated in examples (26a–d).

- (26) a. I mecht wissen, [**wer** **dass** des gsogd hod].
 I.NOM want know.INF who.NOM that this.ACC said has
 ‘I want to know who has said this.’
- b. I mecht wissen, [**welcha** **Trottel** **dass** des gsogd hod].
 I.NOM want know.INF which.NOM jerk that this.ACC said has
 ‘I want to know which jerk has said this.’
- c. dea Mo [**dea** **wo** des gsogd hod]
 the.NOM man who.M.NOM where this.ACC said has
 ‘the man who has said that’
- d. dea Mo [**dem** **wo** I des Geld gebn hob]
 the.NOM man who.M.DAT where I.NOM this money given have
 ‘the man to whom I have given this money’

(Bavarian; Grewendorf & Weiß 2014:3)

Interestingly, Bavarian relative clauses can show the co-occurrence of relative pronoun, the complementiser *wo* ‘where’, and another complementiser, *dass* ‘that’, which occurs exclusively in the presence of a relative pronoun, as shown in (27).

- (27) Dea Mo [der wo dass des gsogd hod] war bsuffa.
 the.NOM man who.M.NOM where that this.ACC said has was drunk
 ‘The man who has said this was drunk.’

(Bavarian; Grewendorf & Weiß 2014:6)

Although the structure of relative clauses also deserves further investigation,⁷ for the purposes of this study, only instances of DFC in the context of embedded *wh*-interrogatives will be considered.

The main difference between Standard German and Bavarian lies in the presence of the complementiser in such constructions. Whereas in German the DFC-filter blocks the realisation of sentences with a doubly filled CP (see Bayer 1984a; Stechow & Sternefeld 1988), as in (28), this constraint does not apply to Bavarian.

- (28) Ich möchte wissen wer (*dass) das gesagt hat
 I.NOM want know.INF who.NOM that this.ACC said has
 ‘I want to know who has said this.’ (Standard German)

According to Weiß (1998), who builds on Grewendorf’s (1988) analysis, the DFC-filter operates at a superficial level, leaving the deep structure of the embedded clause unaltered. In Standard German, the complementiser in the context of *wh*-elements is obligatory deleted at Phonological Form (PF), while in Bavarian its deletion is optional and subject to variation depending on both the speaker and on the specific *wh*-element employed.

Several studies on German dialects (see Bayer 2014; Weiß 2017) have shown that in these varieties, particularly Bavarian, DFCs are allowed only, or primarily, in the presence of *wh*-phrases such as *welcha Trottel* ‘which jerk’ in example (26b). Accordingly, while some scholars judge the co-occurrence of a complementiser with a simple *wh*-element to be acceptable, others consider this combination ungrammatical. Precisely for this reason, Bayer & Brandner (2008) developed a theory, i.e. a hierarchy, of *wh*-elements, according to which simple *wh*-elements exhibit both syntactic and phonological properties of structural heads rather than full phrases. As a result, they act as complementisers and occupy C⁰. Within this framework, *wh*-items are classified into three categories based on speaker acceptability judgements. The first category comprises *wh*-phrases, complex *wh*-elements like *wieviele Leute* ‘how many people’, *welche Farbe* ‘which colour’, or *mit welcher Farbe* ‘with which colour’, which typically co-occur with an overt complementiser. The second category consists of simple *wh*-elements, also referred to as *wh*-words II, which, according to the two scholars, are ungrammatical in the presence of a complementiser. Examples include *wer* ‘who.NOM’, *wen* ‘who.ACC’, *was* ‘what’, *wie* ‘how’, and *wo* ‘where’. These elements are among the most underspecified elements of the lexicon, making them particularly well-suited to acquire additional features (see Bayer 2025). The third category is an intermediate category and it consists of word-like *wh*-elements that display internal syntactic complexity. These elements involve movement of the *wh*-item to the specifier position of a phrase, as illustrated in (29a). This group also includes the dative-marked *wh*-element *wem* ‘who.DAT’, for which a KP (Kase Phrase, or Case Phrase) is posited, as in (29b).

⁷ See Bayer (1984a, 1984b).

(29) a. [PP war [P' um ~~was~~]]

b. [KP K⁰ [NP wem]]

(Schallert & Bidese 2021:150)

This hierarchy of wh-items can be summarised in Table 1:

X-bar Status	Subtype	DFC-restriction
wh-phrase	wh-DPs, wh-PPs	best with overt C
wh-word I	<i>warum</i> 'why', <i>wieviel</i> 'how much', <i>wem</i> 'who.DAT'	↓
wh-word II	<i>wer</i> 'who.NOM', <i>wen</i> 'who.acc', <i>was</i> 'what', <i>wie</i> 'how', <i>wo</i> 'where'.	

Table 1. Hierarchy wh-elements (after Bayer & Brandner 2008:89)

Their central assumption is that wh-word II carry not only a lexical feature <wh>, but also a latent categorial feature <C>, which comprises also polarity (β Pol). These features are ordered on the wh-item to enable their re-merging in the derivation. Accordingly, the feature structure for a simple wh-item can be represented as 'X { α C < β Pol < γ wh ...}', where 'a < b' means 'a dominates b' (Bayer 2025:171). Therefore, the categorial feature <C> can be activated in the derivation, provided that specific structural conditions are met. When activated, it enables the simple wh-element to move to C⁰, thereby occupying the position of the complementiser. Wh-words are conceived then as both 'typing particles' and complementisers, in fact they act like complementisers but express a semantic restriction while binding a variable in VP (see Bayer & Brandner 2008:90).

4.2. Research questions and methodology

In light of the theories and assumptions, concerning both the ET and the DFC, discussed previously, the present study aims to address two fundamental research questions:

(1) To what extent is the categorisation, i.e. hierarchy, of wh-elements proposed by Bayer & Brandner (2008) reflected in the corpus data?

(2) Is the co-occurrence of a wh-word II and a complementiser ungrammatical or is it, even occasionally, attested in corpus data, challenging, therefore, the assumption that simple wh-elements exhibit head-like behaviour?

To address these questions, I conducted a corpus-analysis of the Zwirner-corpus, as it provides a representation of the base form of German dialects, and specifically of Bavarian. Moreover, it is the largest corpus on linguistic variation compiled by the IDS (Institut für Deutsche Sprache, transl. institute for the German language) and one of the most comprehensive for the German-speaking area (see Kehrein & Vorberger 2018). The corpus, accessible via the DGD (Datenbank für Gesprochenes Deutsch, transl. database for spoken German), was recorded between 1955 and 1961 and comprises over 5000 recordings. These recordings consist

primarily of participants' oral narratives of everyday life, dialogues, and selected sentences of the Wenker questionnaires (see Stift & Schmidt 2014). The oral productions of the participants were then transcribed in Standard German, but the original recordings are also available.

The aim of this analysis is to examine the contexts, in which complementisers co-occur with wh-elements, whether simple or complex. To this end, all sentences containing a wh-element were extracted from the corpus, which was previously filtered to isolate the Bavarian dialect. Each occurrence was then individually analysed to identify instances of DFC. Wh-items found in combination with complementisers were subsequently categorised according to the classification proposed by Bayer & Brandner (2008).

4.3. Results

Given the hierarchy of wh-elements outlined in the preceding sections, the expected outcome of the corpus analysis is that DFC constructions occur primarily with complex wh-elements, occasionally with simple wh-elements of type I, and are entirely absent with simple wh-elements of type II.

As displayed by Figure 1, the distinction and thus hierarchy proposed by Bayer & Brandner (2008) is supported by the corpus data. The majority of wh-elements co-occurring with a lexical complementiser (*dass* or *daß* 'that')⁸ are complex, with 32 out of 46 DFC occurrences involving complex wh-elements. Type I wh-items are also attested in the corpus, though less frequently, with 9 instances. Unexpectedly, one instance of DFC occurs with a type II wh-element. While rare, as predicted by their low position in the hierarchy, this example suggests that such combination may not be entirely ungrammatical.

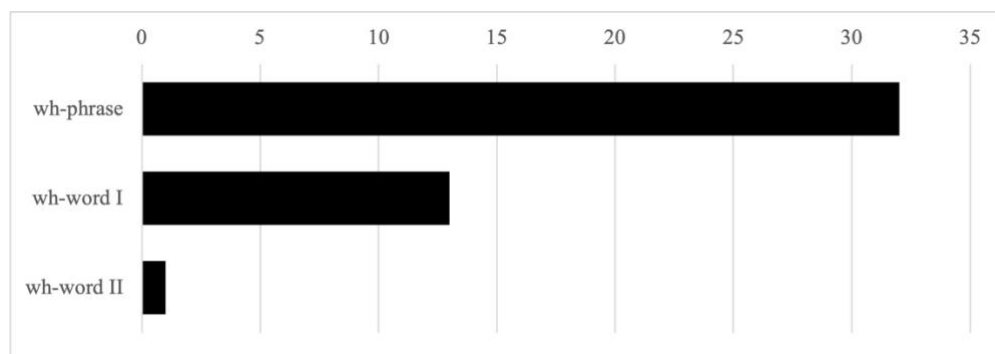


Figure 1. DFC occurrences in the Zwirner-corpus by wh-element type

Table 2 shows the different types of wh-elements for each category that are attested in the Zwirner-corpus.

⁸ The subordinating conjunctions *dass* and *daß* have the same meaning. *Daß* is an obsolete spelling that was replaced by *dass* following the German orthography reform (*Reform der deutschen Rechtschreibung*) of 1996.

wh-classification	wh-type	No. of occurrences
wh-phrase	<i>wie X dass</i> ‘how X that’	13
	<i>wieviel X dass</i> ‘how many X that’	9
	<i>was für X dass</i> ‘what for X that’	4
	<i>PP was dass</i> ‘PP what that’	3
	<i>PP was für dass</i> ‘PP what for that’	1
	<i>PP welch- dass</i> ‘PP which that’	1
	<i>PP wen dass</i> ‘PP who.ACC that’	1
wh-word I	<i>wieviel dass</i> ‘how much that’	7
	<i>warum dass</i> ‘why that’	6
wh-word II	<i>wie dass</i> ‘how that’	1

Table 2. Types of wh-items for each category in the Zwirner-corpus

A clear predominance and greater variety of complex wh-elements can be observed. The largest subgroup consists of construction like *wie X dass* ‘how X that’, where X is typically an adjective, for instance, *wie weit dass* ‘how far that’ in (30a), or *wie gut dass* ‘how good that’ in (30b). Additional examples follow patterns such as *wieviel X dass* ‘how many X that’ (or ‘how much X that’), where X is a DP, as example (30c), or involve prepositional phrases like *für wen dass* ‘for who.ACC that’, as example (30d) demonstrates.

- (30) a. Ich habe schon gewusst, **wie weit dass** sie sind.
 I.NOM have already known how far that they.NOM are
 ‘I already knew how far they are.’ [ZW--_E_04979_SE_01_T_01_DF_01]
- b. Dann sieht man, **wie gut daß** man fischt.
 then see IMP how good that IMP fish
 ‘Then one can see how well one fishes.’ [ZW--_E_04095_SE_01_T_01_DF_01]
- c. dann weiß man es schon **wieviel Arbeit daß** an einem ist.
 then know IMP it already how-much work that on one.DAT is
 ‘then one already knows how much work is involved for one piece.’ [ZW--_E_01201_SE_01_T_01_DF_01]
- d. Aber da habe ich gewußt, **für wen daß** ich gekämpft habe
 but then have I known for who.ACC that I fought have
 ‘But then I knew who I was fighting for.’ [ZW--_E_01468_SE_01_T_01_DF_01]

Among the occurrences of DFC with wh-elements of type I, the two subgroups comprise constructions such as *wieviel dass* ‘how much that’ (or ‘how many that’), as in (31a), and *warum dass* ‘why that’, as illustrated in (31b).

- (31) a. Ich weiß nicht, **wieviel daß** es jetzt sind.
 I know not how-many that it now are
 ‘I don’t know how many there are now.’ [ZW--_E_01249_SE_01_T_01_DF_01]

- b. Dann haben sie ihn einmal gefragt zu Wasserburg,
 then have they.NOM him.ACC once asked about Wasserburg
warum daß er nicht mehr zu mir heraus fährt.
 why that he.NOM not more to me.DAT out drives
 ‘Then they asked him once about Wasserburg, why he no longer drives out to me.’
 [ZW--_E_01351_SE_01_T_01_DF_01]

The only instance of DFC with a simple wh-element of type II found in the Zwirner-corpus occurs with the wh-element *wie* ‘how’, as illustrated in (32).

- (32) [...] das kann ich nicht sagen in der Schmelze, wie **wie daß** das
 it can I not say in the.DAT melt how how that it
 Hitze haben muß dort
 heat have must there
 ‘I cannot say how it must have heat during the melt.’
 [ZW--_E_03539_SE_01_T_01_DF_01]

Although it is the largest corpus in the German-speaking area, the Zwirner-corpus has proven relatively limited for analysing a syntactic phenomenon such as the DFC. Numerous simple wh-elements were considered for the present analysis, but no instances of DFC were found, partly due to the scarcity of embedded interrogatives in the analysed sample. Consequently, it is possible to observe certain patterns and tendencies in the presence of complementisers with wh-elements, but not to draw general conclusions regarding the (un)grammaticality of simple wh-elements in DFC structures without further research.

Nonetheless, studies on German dialects and other Germanic varieties provide valuable insights into the structural position of simple wh-elements in the DFC, and thus ET, structure. An unpublished study by Schallert et al. (2018), based on acceptability ratings, shows that in both Bavarian and West Central German, embedded questions lacking a complementiser are generally rated as more acceptable, regardless of the wh-element involved. Bavarian speakers, however, consistently rate all sentences as more acceptable than other speaker groups. The findings indicate that in Bavarian all wh-expressions are considered acceptable in the presence of a complementiser, with complex wh-elements receiving the highest ratings. Yet, sentences featuring the simple type II wh-elements *wer* ‘who.NOM’ and *wen* ‘who.ACC’ are also judged grammatical (see Schallert et al. 2018:36), a finding further supported by the Bavarian examples in Bayer’s (1984a) analysis of the DFC.

Examples of DFCs with word-like wh-elements also appear in other German dialects, for instance Vorarlberg Alemannic, spoken in Austria. While such constructions are relatively rare, as for the other German dialects, there is no inherent incompatibility between a simplex wh-item and a complementiser, as the example (33) illustrates.

- (33) Jå jetz’ könnt’r (...) v’rزهla, **wia daß** es dā früh’r gs’i ischt.
 well now can-you tell.INF how that it there earlier been is
 ‘Well, now you can tell me a little bit how it was in the olden days.’
 (Vorarlberg Alemannic; adapted from Schallert 2014:81)

Moreover, a comparison with other Germanic minority languages spoken in Northern Italy, which are of Southern Bavarian origin, reveals that DFC constructions can also occur with simple wh-elements. In some of these varieties, such as Saurian (spoken in Sauris, a town in

the Friuli region), there is a marked tendency to omit the complementiser only in the presence of complex wh-elements, as illustrated by the contrast between (34a) and (34b).

- (34) a. I vörsche-ber **ber** as ot gesehn in prief.
 I.NOM ask-me.DAT who.NOM that has seen the.ACC letter
 ‘I’m wondering who saw the letter.’
- b. I vörsche-ber **beta impiegerater** ot gesehn in prief.
 I.NOM ask-me.DAT which.NOM employee has seen the.ACC letter
 ‘I’m wondering which employee saw the letter.’
 (Saurian; Schallert & Bidese 2021:145)

Another Bavarian variety, Mòcheno, spoken in the Bersntol valley in the province of Trento, exhibits a similar pattern with regard to simple wh-elements, which occur alongside a complementiser. At the same time, as in Bavarian, complex wh-elements are also attested in DFC constructions, as shown in examples (35a–b).

- (35) a. I boz’a net **ber az** z’ist kemman gerstern.
 I.NOM know-it not who.NOM that it-is come yesterday
 ‘I don’t know who came yesterday.’
- b. Vrog en de enkl’n **de beil auto az** de hon kaft.
 ask to your uncles of-the which cars that they.NOM have bought
 ‘Ask your uncle and aunt which car they have bought.’
 (Mòcheno)⁹

For this reason, while the corpus data and the data from other studies on Bavarian support Bayer & Brandner’s (2008) hierarchy on the use of wh-items, the claim that simple wh-elements categorically cannot appear with complementisers is not borne out, in fact in both Bavarian and other Bavarian varieties simple wh-items are indeed attested with a complementiser. Thus, an analysis on the position of wh-elements in the structure that accounts for these findings is necessary and will be presented in the following section.

4.4. Analysis

The present analysis is based on the observation that, although the hierarchy proposed by Bayer & Brandner (2008) is generally respected in Bavarian and reflected in corpus data, it requires some flexibility, particularly concerning simple wh-elements, including both type I and type II wh-words. Specifically, evidence challenges the claim that simple wh-items occupy the head position of the left periphery, i.e. C⁰. The corpus analysis conducted in this study has shown that, even within a limited dataset, simple wh-words and a complementiser do co-occur, indicating that such structures are not ungrammatical, although infrequent. What is more, evidence from other studies, primarily based on acceptability judgements, supports the claim that this co-occurrence is not excluded in Bavarian, nor in other German dialects or Bavarian minority languages spoken in Northern Italy. Furthermore, a statistical analysis on Bayer’s (2014) data on the distribution of wh-items with complementisers, particularly the dative-

⁹ Unpublished data collected for my PhD project via a questionnaire.

marked element *wem*, reveals no statistically significant difference compared to the other wh-classes. This calls into question the justification for positing a KP projection that would classify *wem* as a type I wh-element, suggesting instead that such an analysis may be *ad hoc* (see Schallert & Bidese 2021:151).

Another issue in Bayer & Brandner's (2008) analysis lies in the activation of the latent <C> feature in simple wh-elements. Given the variation in speaker judgements regarding the acceptability of DFCs with type II wh-items, the conditions under which this feature is activated remain insufficiently defined. For the analysis to hold and to describe the variation, more robust and clearly delineated conditions for its activation would be necessary. The observed variation and instability in activation may indicate that simple wh-items do not, in fact, possess a latent <C> feature. Instead, they may pattern more closely with complex wh-phrases. Therefore, it can be argued that all wh-elements occupy the same structural position, and that the observed variability is better explained by differing conditions determining the overt realisation or deletion of the complementiser at PF.

Following the corpus analysis and the considerations outlined above, I propose that all wh-elements occupy the same structural position, regardless of their complexity or the structure in which they appear. Specifically, the position for wh-elements is the specifier of FinP, namely SpecFinP.¹⁰ A complementiser is always permitted in the structure, but while in German, it is obligatorily deleted in the context of wh-embedded clauses, in other varieties its deletion is optional. This deletion, or lack of lexicalisation, appears to depend on constraints related to the wh-element itself, such as grammatical weight, grammatical relation, or animacy, as argued by Schallert et al. (2018). Nonetheless, a more precise account of these constraints and their interaction requires further empirical investigation, which lies beyond the scope of the present study.¹¹

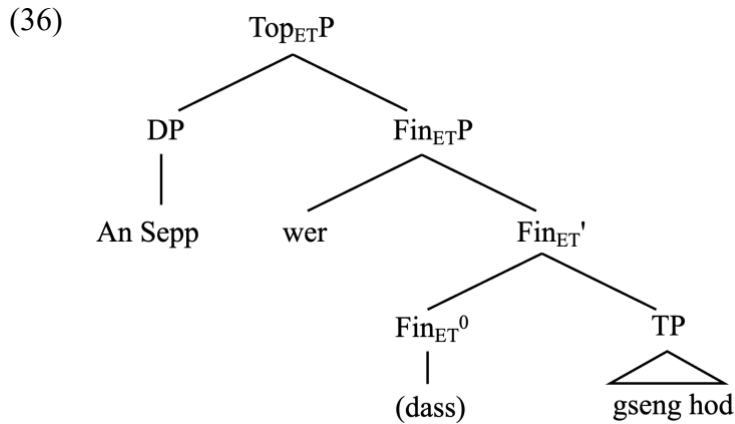
Turning to the central phenomenon of this study, that is ET constructions from embedded interrogative clauses, I follow Grewendorf's (2015) proposal that simple wh-elements occupy SpecFinP, as mentioned above, while the extracted constituent moves to SpecTopP and is licensed by a Top-head.¹² This configuration prevents the co-occurrence of an extracted XP and a complex wh-element in SpecFinP, thus rendering such ET constructions ungrammatical. The complex wh-element, in fact, also needs to be licensed by a Top-head, which in German, and Bavarian, is not recursive. Furthermore, this analysis accounts for attested cases of ET involving both a wh-element and a complementiser, as seen in example (3a). The structure allows for the

¹⁰ This proposal would also offer a potential solution for the Reis' dilemma, namely that there is a difference between wh-elements in main and embedded clauses. In fact, in Standard German, embedded interrogatives must not appear with verb second, while "true" interrogatives cannot appear with verb last (see Weiß 1998).

¹¹ An anonymous reviewer suggested that the co-occurrence of simple wh-element and overt complementisers may not reflect a deep syntactic structure but rather could be traced back to a PF-phenomenon in which both the wh-word and the complementiser are pronounced according to optional spell-out rules. Although some sources (Schönenberger 2017), for which I thank the reviewer, argue that the DFC relies on prosodic properties, this does not seem sufficient to explain the variation in other Bavarian dialects and minority languages, in which the complementiser appears with almost all wh-items, stressed or not. Therefore, I take the view that the structure allows for the presence of the complementiser, which can be then deleted at PF for various reasons such as animacy, grammatical weight, grammatical relation of the wh-item (Schallert et al. 2018), or prosody.

¹² As pointed out by a reviewer, it may be worthwhile to examine how this syntactic proposal could interface with a discourse-related analysis that sheds light on the emphasis involved. While this is a valuable observation, I currently lack sufficient data to determine whether the emphasis is tied to a specific category or whether it is a distinct phenomenon. Moreover, a semantic and pragmatic analysis lies beyond the scope of the present work. For these reasons, I prefer not to speculate further here, though I take this to be a question that deserves closer attention in future work.

presence of a complementiser, even if it is not always overtly realised. This proposal can be illustrated with the structure of the embedded clause depicted in (36).



Empirical support for this structural analysis comes from Weiß's (2023) investigation of the Bavarian CP. Standard German exhibits a special topicalisation construction that can provide evidence for a split CP. This construction involves post-initial connectors (*nacherstfähige Konnektoren*), which appear in main clauses between the constituent in the prefield and the finite verb in Fin^0 (see 37). These post-initial connectors, such as *nämlich* 'namely' or *allerdings* 'however', have been analysed as being base-generated in Top^0 , with the topicalised constituent in SpecTopP , as illustrated in (38).

- (37) Peter nämlich liebt die Gefahr.
 Peter namely loves the danger
 'Namely, Peter loves danger.' (Standard German; Weiß 2023:781)

- (38) [ForceP [IntP [TopP *Peter* [Top° *nämlich* [FocP [FinP *liebt* ... (Weiß 2023:781)

In Bavarian, some post-initial connectors, such as *oba* 'but', are possible within ET structures, as shown in (39).

- (39) Da Xaver oba daß an Mantl kafft hot hot neamad glaubt.
 the Xaver.NOM but that a coat bought has has nobody.NOM believed
 'As for Xaver, nobody believed that he bought a coat.'
 (Bavarian; Weiß 2023:782)

Assuming the validity of Weiß's (2023) analysis of post-initial connectors, then, in ET constructions with these connectors, the extracted constituent cannot be in SpecFinP but in a higher position, which is SpecTopP , as exemplified by (40).¹³

- (40) [FinP [Top_ETP *da Xaver* [Top_ET° *oba* [Fin_ETP [Fin_ET° *dass* [TP *an Mantl kafft hot*]]]]]...

¹³ For the reasons outlined above (see §2.1), contrarily to Weiß's ET-analysis, I assume that the extracted element is located in the left periphery of the embedded clause. However, Weiß's (2023) framework on post-initial connectors is compatible with both approaches. For the structure of the ET with post-initial connectors as proposed by Weiß, refer to Weiß (2023:783).

If this holds for standard ET cases (i.e., extraction from a complementiser), it suggests that the SpecTopP position is likewise available for extraction in embedded interrogative contexts, leaving SpecFinP for the simple *wh*-element. The acceptability of sentences such as (41), structurally represented in (42), where post-initial connectors appear within an ET structure in an embedded interrogative, further supports the analysis proposed in this study.

- (41) An Sepp oba wer (dass) gseng hod, woäß i ned.
 the.ACC Sepp but who.NOM that seen has know I.NOM not
 ‘I do not know who has seen Sepp.’ (Bavarian)¹⁴

- (42) [FinP [Top_{ET}P *An Sepp* [Top_{ET}° *oba* [Fin_{ET}P *wer* [Fin_{ET}° *dass* [TP *gseng hod*]]]]]...

5. Conclusions and further implications

This paper has examined the phenomenon of the Emphatic Topicalisation, a characteristic feature of Bavarian syntax. Drawing on two different frameworks — Bayer (2001) and Bayer & Dasgupta (2016) on one hand, and Grewendorf (2014, 2015) on the other — I have argued, through the analysis of the DFC constructions in Bavarian, that simple *wh*-elements do not occupy the C-head position. This claim has been supported by a corpus study of the Zwirner-corpus, supplemented by comparative data from other German dialects and Southern Bavarian varieties. In accordance with Grewendorf’s proposal, I have shown that *wh*-elements occupy SpecFinP, while the extracted XP moves to SpecTopP, thereby excluding the licensing of complex *wh*-phrases.

The study confirms the presence of a *wh*-element hierarchy in Bavarian, as proposed by Bayer & Brandner (2008), yet it also demonstrates that the co-occurrence of simple *wh*-items with a complementiser is not completely excluded. The findings also reinforce the idea advanced by Weiß & Strobel (2018) that correlations among syntactic phenomena in the left periphery exist, allowing one structure, in this case the DFC, to shed light on another (the ET). Therefore, it is important to analyse interconnected syntactic phenomena to uncover deeper structural insights.

Although the Zwirner-corpus offers limited scope for a syntactic investigation, this study is among the first to analyse spontaneous spoken data rather than relying solely on grammaticality judgements and intuitions of the authors. Nevertheless, the analysis remains preliminary and should be expanded with further empirical work, i.e. questionnaires and interviews (see Weiß & Strobel 2018). With more extensive data, a fuller picture of the ET structure could be represented, including the features that trigger the movement of the XP and of the embedded sentence. Finally, the comparative insights presented here lay the groundwork for a broader cross-linguistic analysis of the DFC structure in Germanic and Romance languages in the Alpine region, which display significant variation.

¹⁴ I would like to thank Helmut Weiß for suggesting this sentence.

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Abbreviations

3PL	third person plural	INF	infinitive
ACC	accusative	M	masculine
DAT	dative	NOM	nominative
IMP	impersonal particle	SUBJ	subjunctive

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Was zu beschreiben ist
Towards a taxonomy of German non-canonical passives

Fabian Zöfelt

German passive(-like) constructions differ from each other in various ways. They have different morphology, passive-subjects, and add certain ‘nuances’ to the interpretation of these constructions. Nevertheless, they are unified by the demotion of the logical subject. In this paper, I will argue that so-called *non-canonical passives* (NCP) and the core construction, the *werden*-passive, share a vP_{PASS} which is responsible for the demotion of the agent. Using criteria developed from both theoretical assumptions and descriptive evidence, I show that the *sein*-stative, the *bekommen*-passive and the modal *sein zu*-construction can be mapped on the core-periphery continuum.

1. Introduction

In the German verbal inflection paradigm, voice is usually introduced as the binary opposition of active passive and passive. Of course, this does not fit into the landscape of German passive constructions. Based on a broader definition of diathesis, Askedal (1987:41) assumes that there are 15 different types in German, which also include lexical changes. In the generative framework, a lexical conversion is not a syntactic operation.¹ In this approach, passivization is

¹ Askedal (1987:33), for instance, argues that (ia) might be derived from (ib).

- (i) a. *Ich habe den Termin völlig vergessen.*
I have the.ACC date.ACC completely forget.PTCP
‘I have completely forgotten the date.’
b. *Der Termin ist mir völlig entfallen.*
the.NOM date.NOM is me completely slipped
‘The date has completely slipped my mind.’

understood as a syntactic operation affecting the realization of verbal arguments. Thus, I exclude lexical variants of a semantic concept, such like *vergessen* and *entfallen* for the concept of FORGET. Unfortunately, even this restriction does not reduce the candidates for the passive voice to just one. German grammarians usually discuss two to four constructions (cf. a.o. Helbig & Buscha 2001; Haider 2010; Eisenberg 2020; Duden 2022); the eventive *werden*-passive (1a), the *sein*-stative (1b), a supposedly dative conversion (1c), and a modal construction (1d).²

(1) a. **werden-passive**

Die Haar-e werden dem Kunde-n geschnitten.

the hair-NOM become the costumer-DAT cut.PTCP

‘The hair is cut for the costumer.’

b. **sein-stative**

Die Haar-e sind dem Kunde-n geschnitten.

the hair-NOM are the costumer-DAT cut.PTCP

‘The hair is cut for the costumer.’

c. **bekommen-passive**

Der Kund-e bekommt die Haar-e geschnitten.

the costumer-NOM gets the hair-ACC cut.PTCP

‘The costumer gets his hair cut.’

d. **Modal zu sein-passive**

Die Haar-e sind dem Kunde-n zu schneiden.

the hair-NOM are the costumer-DAT to cut

‘The hair is to be cut for the costumer.’

All constructions in (1) correspond with the active voice sentence in (2). They also have in common that the logical subject, *der Friseur* ‘the hairdresser’, is suppressed in (1a–d). However, they deviate in terms of the finite verb (*werden* ‘become’ (1a), *sein* ‘be’ (1b, d), *bekommen* ‘get’ in (1c)), the morphological properties of the lexical verb (past participles in (1a, b, c), *zu* ‘to’-infinitival (1d)), and the θ -role of their subject (Patient in (1a, b, d), Recipient in (1c)).

(2) **Active voice**

Der Friseur schneidet dem Kunde-n die Haar-e.

the hairdresser.NOM cuts the costumer-DAT the hair-ACC

‘The hairdresser cuts hair for the costumer.’

Judgements on the constructions in (1a–d) also differ: Haider (2010) only reports the *werden*-passive while describing (1d) as a passive-like construction. The Duden (2022) assumes that (1a) is a syntactic passive, as is the *bekommen*-passive. They exclude the stative and argue that the modal variant is just passive-like. Another distribution is offered by Zifonun et al. (1997) and Hentschel & Weydt (2021). Both exclude only (1d). They differ only in the characterisation of the modal construction as a passive-like structure. Eisenberg (2020), in contrast, includes (1d) but excludes the *bekommen*-construction. All constructions are described as passives in Helbig

² In order to emphasise the relevant information, I will only gloss case, even if some morphemes are also expressions of number.

& Buscha (2001). This brief overview demonstrated major disagreement. The assumptions only agree with respect to *werden*-passive as the ‘real’ passive. It is, thus, described as ‘central’ (Zifonun et al. 1997:1791), ‘canonical’, and the ‘core’ (Alexiadou & Schäfer 2013a:2). This implies that (1 b–d) are *non-canonical passives* (henceforth: NCPs; For cross-linguistic discussion see Alexiadou & Schäfer 2013b). In this paper, I aim to answer three research questions:

- (RQ) a. How do NCPs differ from each other?
 b. What are the shared properties of the core and NCPs?
 c. How can the landscape of passive voice in German be modelled?

The outline of my argumentation is as follows. In the next section, I will present the properties of the core, theoretical assumptions, and my catalogue of criteria to determine the taxonomy. These introductory remarks are necessary because, according to Eisenberg (2020:139f.), the taxonomy of NCPs must be based on the most grammaticalised one, which is the *werden* passive. The third section deals with the NCPs presented in (1b–d) and compare their behaviour with the catalogue. The taxonomy will be discussed in chapter 4. Brief concluding remarks will be given in the last section.

I will show that all NCPs contain a vP_{PASS} and that NCPs split up into ‘real’ passives and passive-like constructions. Thus, there are (at least) two peripheral layers in the core-periphery-relation of German passive voice. I argue that, based on the diagnostics, the modal passive-construction is a ‘real’ passive while the stative and *bekommen*-passive are only passive-like.

2. The core construction

2.1. Properties

I will repeat (2) and (1a) in (3). The lexical verb *schneiden* ‘cut’ selects an agent (A) as the external argument (EA), a theme (T) as the direct object (DO) and a recipient (R) as the indirect object (IO).³ (3b) illustrates that the EA is not expressed (as a DP) and that the theme occurs with nominative case. The predicate also changes morphologically: the synthetic form is replaced by an analytical periphrasis which consists of the auxiliary *werden* ‘become’ and a past participle.

- (3) a. *Der Friseur schneidet dem Kunde-n die Haar-e.*
 the.NOM hairdresser.NOM cuts the.DAT costumer-DAT the.ACC hair-ACC
 ‘The hairdresser cuts hair for the costumer.’
 idiomatic: ‘The hairdresser is cutting the costumer’s hair.’
 b. *Die Haar-e werden dem Kunde-n geschnitten.*
 the.NOM hair-NOM become the.DAT costumer-DAT cut.PTCP
 ‘The hair is cut for the costumer.’

The IO is not affected – even if there is no DO available for promotion. It results in an impersonal passive. In (4), *gratulieren* ‘congratulate’ does not select a DO but a IO. In German, only the DO is subject to promotion.

³ I neither distinguish between the θ -roles patient and theme, nor between the θ -roles recipient and beneficent. They usually correspond to the same argument – the direct object is θ_T - and the indirect object is θ_R -marked in most cases. Therefore, they are unified by T and R.

- (4) *Es wird dir gratuliert.*
 EXPL becomes you.DAT congratulate.PTCP
 ‘You are congratulated.’

So far, I have shown how passivization affects the internal arguments and the EA. Sentences such like (3b, 4) are intuitively interpreted with an implicit cutting or congratulating entity. This leads to two possibilities for the state of the EA. It could either be understood existentially or be expressed covertly in the syntax. This question has important theoretical implications.

Based on implicit argument tests by Roeper (1987) and Bhatt & Pancheva (2017) among others, it can be shown whether or not a clause contains an implicit argument (IMPL). A clause contains an IMPL if it is possible to express it with a *by*-phrase overtly (Roeper 1987:268; Bhatt & Pancheva 2017:8). In German, such phrases are PPs. In most cases, the P-element is *von* ‘from’ (see (5)); *durch* ‘by’ and *seitens* ‘on the part of’ are less common (Hoffmann 2016:308). They are referred to by *Agensphrasen* ‘agent phrases’ (Duden 2016:§796).

- (5) *Heute wird von den Gästen getanzt.*
 today becomes by the guests dance.PTCP
 ‘Today it is danced by the guests.’

Further evidence comes from the ability to control a rational clause (Roeper 1987:268; Bhatt & Pancheva 2017:8; cf. *purpose clause* in Wanner’s terminology (2009:115f.)). In such embedded clauses, PRO needs to be bound properly in order to be interpreted correctly. Since there are no potential binders for PRO in (6), this is again strong evidence in favour of IMPL.

- (6) *Heute wird IMPL_i getanzt, um PRO_i die Freude zu zeigen.*
 today becomes IMPL_i dance.PTCP, in order to PRO_i the joy to show.INF
 ‘Today it is danced to show the joy.’

The example (7) illustrates that also the occurrence of *subject oriented modifiers* (Baker et al. 1989:221) does not lead to ungrammaticality. According to Roeper (1987:268) and Bhatt & Pancheva (2017:8), such adverbs are associated with the implicit agent (henceforth, as *agent orient modifiers* (AOMS)). Thus, *werden*-passive satisfies all criteria for IMPL.

- (7) *Heute wird IMPL_i absichtlich_i getanzt.*
 today becomes IMPL_i deliberately dance.PTCP
 ‘Today it is danced deliberately.’

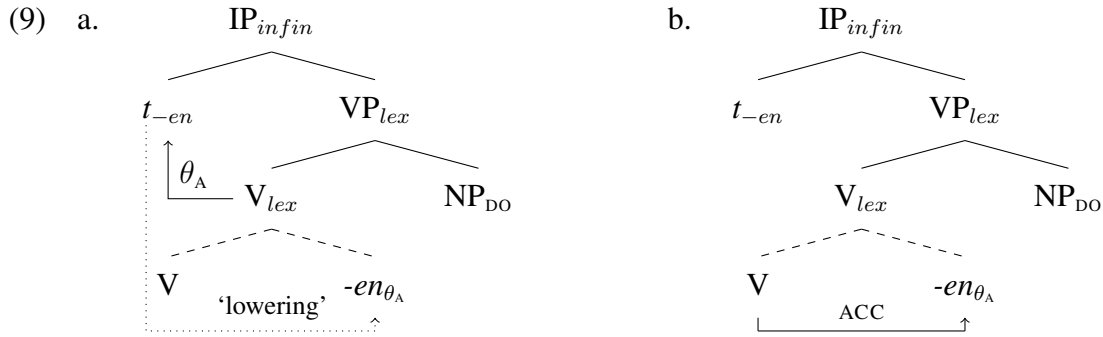
So far, I discussed the core properties of the *werden*-passive. These are (i) the DEMOTION of the EA, the agent, (ii) PROMOTION of the DO, (iii) a morphological change to an ANALYTIC PREDICATE consisting of the auxiliary *werden* ‘become’ and a past participle, and (iv) the IMPLICIT AGENT. The next section provides a theoretical approach to derive all this properties.

2.2. Theoretical assumptions

The ‘standard theory’ (Alexiadou et al. 2018:408) for passivization is based on the following proposal (Baker et al. 1989:219) (see also Jaeggli 1986).

(8) The Passive morpheme (*-en*) is an argument.

Baker et al. (1989) assume that the passive morpheme *-en*⁴ is base-generated as the head of an IP. This IP is selected by a V head that introduces the passive auxiliary. The IP itself takes a VP as its complement which hosts the lexical information. They further claim that *-en* is a verbal affix phonologically and a syntactic argument which receives the external θ -role, i.e. A (agent). Based on the *Visibility Condition* (Chomsky 1981:334) and the *Case Filter* (Chomsky 1995:111), Baker et al. (1989:222) claim that *-en* has to be case-marked since it is a syntactic argument. Due to its phonological role as affix, *-en* needs to be lowered to V. Given this landing site, V appears to be the closest case assigner and case-marks *-en* with accusative. At this point, the NP_{DO} is not case-marked yet and has to move. The next case position is the higher spec,IP. There, DP_{DO} receives nominative case. I add the sub-labels *infin* to the IP and *lex* to VP.

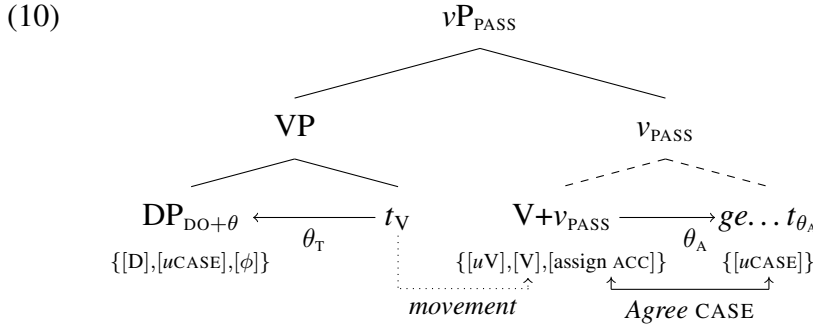


In order to adapt Baker et al.'s (1989) approach to German, one has to consider some language specific properties. As in English, German exhibits a number of different past participle morphemes. I use the circumflex *ge...t* since it is the most common. Additionally, I adjust the head directionality to German head-final configuration.

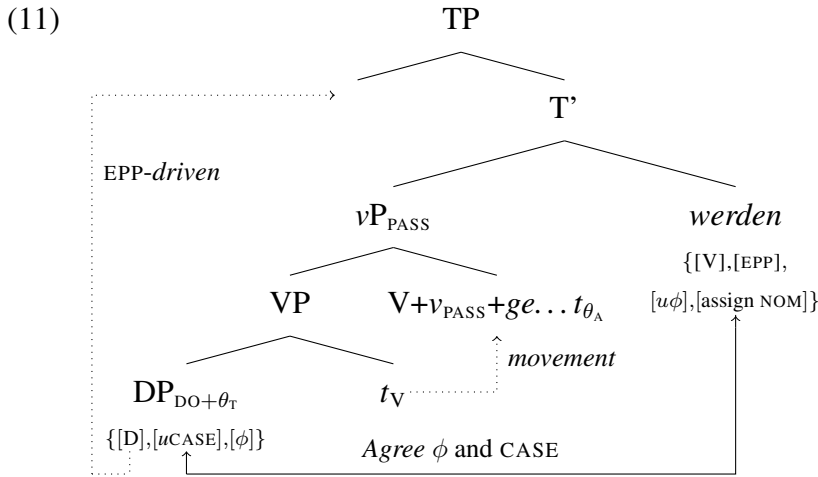
Baker et al.'s head lowering operation is not straightforwardly adoptable since there is no such movement type in German. The implication of this is a failure of Baker et al.'s account. If the implicit EA would stay in *I_{infin}*, V would still precede the passive morpheme in the linearization but the assignment of ACC would not be possible anymore. The EA would not be in V's c-commanded domain. *-en*'s closest case-assigning head would be *I_{fin}*. Consequently, the lexical *V_{head}* would assign ACC to its complement, the DP_{DO}.

Note that Baker et al. assume that the EA is introduced in the I-domain. In more recent approaches, it is assumed that the EA is base-generated in spec,vP (Repp & Struckmeier 2020:28f.). The *v*-head contains an [*uV*] feature and assigns case, namely [ACC]. For German passives, I assume that the lexical VP is selected by *v*-head. Crucially, this *vP* differs from an active voice *vP* in some respects. As I showed above, the logical subject cannot be expressed as a DP. This is due to the passive morpheme which blocks its realization. Thus, this morpheme must enter the derivation first. I argue therefore that the circumflex, *ge...t*, is introduced as the EA in a complex passive *v*-head. This head bears an [*uV*] feature leading to the head-movement of V. It also has an [assign ACC] feature like canonical *vP*. Consequently, ACC is assigned to the EA because it is the closest goal of the *v_{PASS}*-probe. This feature-driven approach explains the combination of the lexical verb and the passive morpheme too.

⁴ *-en* represents all (passive) past participle morphemes.



The DP_{DO} is currently left with its $[uCASE]$ feature. The next case-assigning probe is T. T has an $[u\phi]$ and an $[EPP]$ feature too. In its c-command domain, only the DP_{DO} constitutes a fitting goal. After agreement, T's $[EPP]$ feature causes the movement of DP_{DO} .



2.3. Interim summary: criteria of canonicity

In this section, I motivate criteria which include theoretical and descriptive properties of the canonical core. Based on this catalogue, I will determine the taxonomy of passive constructions.

In section 2.1, I introduced four elementary components of German passive. These are DEMOTION, PROMOTION, the morphological requirement of an ANALYTIC PREDICATE, and an IMPL. In section 2.2, I provide the theoretical explanation for these properties which is the argument status of the passive morpheme.

Firstly, the passive morpheme's θ_A -role leads to the DEMOTION since the EA cannot be expressed. Secondly and as an epiphenomenon of the demotion, DP_{DO} cannot be case-marked in the verbal domain. This explains the criterion of PROMOTION. Thirdly, the passive morpheme causes the formation of a past participle. For this reason, an auxiliary is inserted. Thus, the MORPHOLOGICAL criterion is satisfied. The fourth property, the strong evidence of an IMPL, is straightforwardly explained by the expression of the θ_A -role *via* the passive morpheme.

(12) A German passive(-like) construction is canonical *iff* it satisfies the following criteria:

- a. DEMOTION of the logical subject, and
- b. PROMOTION of the direct object, and

- c. the verbal event is expressed in a PERIPHRAISIS consisting of *werden* and a past participle, and
- d. the construction passes the tests for IMPLICIT ARGUMENTS.

The canonicity of an NCP depends on the extent to which the criteria are satisfied. The reminder of this paper will explore this issue.

3. Non-canonical constructions

3.1. The stative construction

The configuration of *sein* ‘be’ and a past participle is no limited to this passive contender. It is also used for perfect tense for intransitives (*Tom ist gegangen* ‘Tom has left’) as well as for copula construction with a adjectival past participle (in this case the semantic implication of (13) would be ‘the wound is a bandaged one’).

- (13) *Die Wunde ist verbunden.*
 the.NOM wound.NOM is bandage.PTCP
 ‘The wound is dressed.’

The debate on German stative constructions has a long tradition. Four major accounts have been proposed. In the early 20th century, Wilmanns ([1904] 2019:§76 (2)) and Behaghel (1924:§645) assumed that the stative is actually a past tense variant of the core construction with an omitted past participle of *werden*.⁵ Accordingly, *sein* ‘be’ would be a tense-auxiliary.

According to Litvinov & Nedjalkov (1988), Nedjalkov (1988) and Leiss (1992) the stative and all other constructions including *sein* ‘be’ and a past participle would actually express an aspectual periphrasis. They refer to them as *Resultativkonstruktion* ‘resultative construction’, the result of a verbal event. In this approach, *sein* is an aspectual auxiliary.

Since Glinz (1952), the stative construction is described as passive (cf. a.o. Zifonun et al. 1997; Duden 2016). This analysis identifies *sein* ‘be’ as an auxiliary, but as a voice-auxiliary.

The fourth view considers *sein* ‘be’ as a copula (Rapp 1996; Kratzer 2000; Maienborn 2007). This corresponds with *adjectival passives* (cf. Levin & Rappaport 1986; Emonds 2017).

3.1.1. Data

In this section, the proposed syntactic analyses will be reviewed based on the observable behaviour of the *sein*-stative. Since the insertion of the past participle of *werden*, i.e. *geworden*, leads to ungrammaticality (14), the assumption of an underlying *werden*-passive with an omitted past participle is denied (cf. Höhle 1978:43).⁶

⁵ The past perfect tense form of *werden* is *ist geworden* ‘has become’. A past tensed *werden*-passive consists of a finite form of *sein*, the past participle of the lexical verb, and *geworden*.

⁶ Co-occurring past participles are not ruled out in German generally. The so-called *Doppelperfekt*-‘double perfect’ construction consists of two past particles and a finite verb (cf. Rödel 2011).

- (14) *Sie ist betäubt* *gewesen* (**geworden*).
 she is anaesthetise.PTCP be.PTCP become.PTCP
 ‘She has been anaesthetised.’

Rapp (1996:236–238) provides another argument against the omission view (cf. Kratzer 2000:387–389; Maienborn 2007:88f.). If the stative is actually a reduced *werden*-passive, they should behave similarly. (15), however, shows complementary distributions regarding temporal adverbials. Statives allow temporal locations and disallow durations and *vice versa* for the *werden*-passive (*seit einem Tag* ‘for one day’ signals temporal duration and *vor einem Tag* ‘a day ago’ refers to a temporal location).

- (15) a. ...*weil die Haare* **seit einem Tag / vor einem Tag geschnitten wurden*.
 because the Haare.NOM for one day / ago one day cut.PTCP became
 ‘...because the hairs were cut a day ago.’
 b. ...*weil die Haare* *seit einem Tag / *vor einem Tag geschnitten wurden*.
 because the Haare.NOM for one day / ago one day cut.PTCP became
 ‘...because the hairs were cut a day ago.’

Another (to my knowledge) previously unmentioned reason is the fact that both constructions were already present in Old High German while perfect tense was grammaticalized in late OHG. It is contrainstuitive to assume that the stative characterized a perfect tense form of the *werden*-construction even before this tense form exists (for both attested periphrases and the grammaticalization, see Speyer 2018:289–297).

The most straightforward argument against the resultative analysis is the ungrammaticality of omission of the auxiliary under coordination. The idea of this approach is that all constructions have an aspectual *sein* and a past participle. Under coordination, conjuncts may undergo omission if they exhibit identity of some kind (cf. a.o. Merchant 2001). In this case, the shared identity would be to the finite verb. With (16), Maienborn shows that the temporal *sein* in the first conjunct and the stative one in the second are not of the same kind (2007:94).

- (16) *Sie ist während der OP aufgewacht und *(ist) sofort unter Narkose*
 she is during the OP wake up.PTCP and is immediately under anaesthesia
gesetzt.
 put.PTCP
 ‘She woke up during the operation and was immediately put under anaesthetic.’

Let us now turn to the passive approach. In section 2.2, I showed that *by*-phrases are indicators for passivization and the presence of an IMPL. The stative differs in this respect from the core construction. While the *werden*-construction allows the insertion in almost any case, *by*-phrases are very rare in the stative (e.g. Duden 2016:§811). According to Helbig & Buscha (2001:162), the possibility of overtly expressed agents depends on how much the DP_{DO} is affected by the verbal event. In (17a), the *by*-phrase is marked but does not yield ungrammaticality because the result of the verbal event confirmation is not irreversible since it might be denied by i.e. the supervisor of the trainee. However, the event in (17b) is irreversible. The sheep is highly affected by the event. This distinction is in line with Kratzer’s distinction of *target state passive*

and *resultant state passive* (2000:162f.). While target states allow the insertion of *by*-phrases, resultant does not.

- (17) a. *Die Anfrage ist (von dem Praktikanten) bestätigt.*
 the request is (by the trainee) confirm.PTCP
 ‘The request is confirmed (by the trainee).’
 b. *Das Lamm ist (*von dem Wolf) gerissen.*
 the lamb is (by the wolf) torn.PTCP
 ‘The lamb is torn (by the wolf).’

For the resultant state, even AOMS and rational clauses seem to be ungrammatical (18). The tests for IMPL show bad results. This seems to be constrained semantically but this does not necessarily deny the passive status.

- (18) a. *Die Anfrage ist (*absichtlich) bestätigt.*
 the request is (deliberately) confirm.PTCP
 ‘The request is confirmed (deliberately).’
 b. *Die Anfrage ist bestätigt, (*um Ergebnisse zu präsentieren).*
 the request is confirm.PTCP, (in order to results to present.INF)
 ‘The request is confirmed (in order to present results).’

The fourth proposed analysis assumed that the stative is a copula construction (cf. Rapp 1996; Kratzer 2000; Maienborn 2007; Duden 2022). In German, past participles are not only used verbally in periphrases but also adjectivally. They cannot be distinguished by their bare morphology. The following tests disambiguate both uses. In contrast to verbal past participles, adjectival ones can carry a negation prefix *un-* and be coordinated with genuine adjectives (19a). They also show comparative and superlative suffixes (19b, c),⁷ are involved in compounds which do not exist as finite verbs (**Ich hausmache Marmelade/Ich mache Marmelade haus.*; (19d)) and can be modified by certain particles such as *zu* ‘too’ (19e) Maienborn (a.o. 2007:91–92).

- (19) a. *Die Haar-e sind un-gewaschen und ekl-ig.*
 the hair-NOM are NEG-wash.PTCP and disgust-ADJ
 ‘The hair is unwashed and disgusting.’
 b. *Die Strecke war noch befahren-er als der Corso in Rom.*
 the route was even drive on-COM than the Corso in Rome
 ‘The route was even busier than the Corso in Rome.’ (Zeit 22.10.1998)
 c. *Sie war am gefährde-sten.*
 she was endager-SUPER
 ‘She was the most in danger.’ (Der Tagesspiegel 06.01.20)

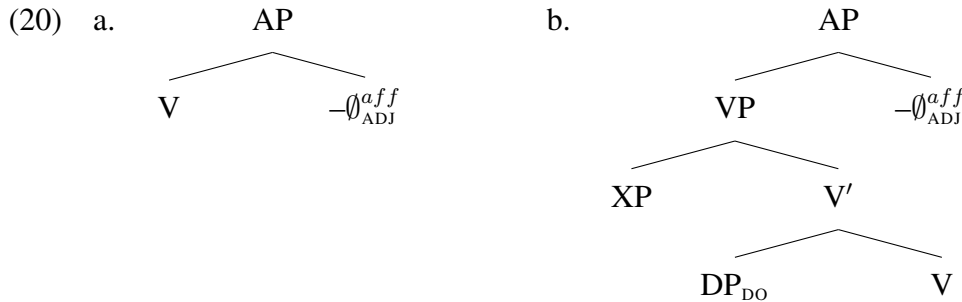
⁷ Both examples were found in the [DWDS corpus](#). The queries were *@befahrener* and *@gefährdesten*. The ZEIT-corpus requires registration.

- d. *Die Marmalade ist haus-gemacht.*
 the jam is home-make.PTCP
 ‘The jam is homemade.’
- e. *Die Strecke war zu befahren.*
 the route was too drive on.PTCP
 ‘The route was too busy.’

This section provided apparently contradictory data of the *sein*-stative. It shows minor possibilities for adjoining a *by*-phrase, which spoke in favour of a passive analysis and thus also for a νP_{PASS} . However, it also turned out that the past participle is not verbal but adjectival. This would exclude a (verbal) passive analysis.

3.1.2. The analysis

Based on Lieber (1980), Rapp (1996) and Kratzer (2000) assume that a zero affixal adjective-head is adjoined to either the bare past participle (20a) or to a VP hosting the past participle and its arguments and adjuncts such as *by*-phrases or instrumental adjuncts. This merge operation results in a *de-verbalized* past participle. They argue that the past participle is hosted in V.



Maienborn (2007:101), however, assumes that $\emptyset_{ADJ}^{aff}$ always merges with the VP (20b). Such a complex syntactic unit would also restrict sub-constituents from moving separately. Maienborn (2007:100f.) provides evidence by showing that scrambling is not possible.

Such a structure has two problems. Firstly, according to Frey & Pittner (1998, 1999), certain adverbials such as instrumentals are adjoined to the νP ; not to VP. However, given the presence of the νP , it is counterintuitive why *by*-phrases are not licensed. Kratzer’s (2000) interpretation of $-\emptyset_{ADJ}^{aff}$ helps here. She argues that the adjectival head is semantically interpreted as a stativizer which roughly speaking ‘eliminates’ the event e and just outputs the state s .

- (21) Building a stative (Kratzer 2000:392; abstracted)
 Stem+object: $\lambda s \lambda e [\sqrt{\text{verbal}} \text{ROOT}(e) \ \& \ \text{event}(e) \ \& \ \text{PTCP}(\text{DP}_{DO})(s) \ \& \ \text{cause}(s)(e)]$
 stativizer: $\lambda R \lambda s \exists e R(s)(e)$
 Output: $\lambda s \exists e [\sqrt{\text{verbal}} \text{ROOT}(e) \ \& \ \text{event}(e) \ \& \ \text{PTCP}(\text{DP}_{DO})(s) \ \& \ \text{cause}(s)(e)]$

In consequence, the event is, thus, interpreted existentially and no argument position left for the EA. This notion neutralises the θ_A -role because it is bound to the event e . The degree of this

stativizing effect seems to differ with respect to the lexical properties of the lexical verb. Thus, a combination of vP_{PASS} and Kratzer's stativizer on the A-head solves the first problem.

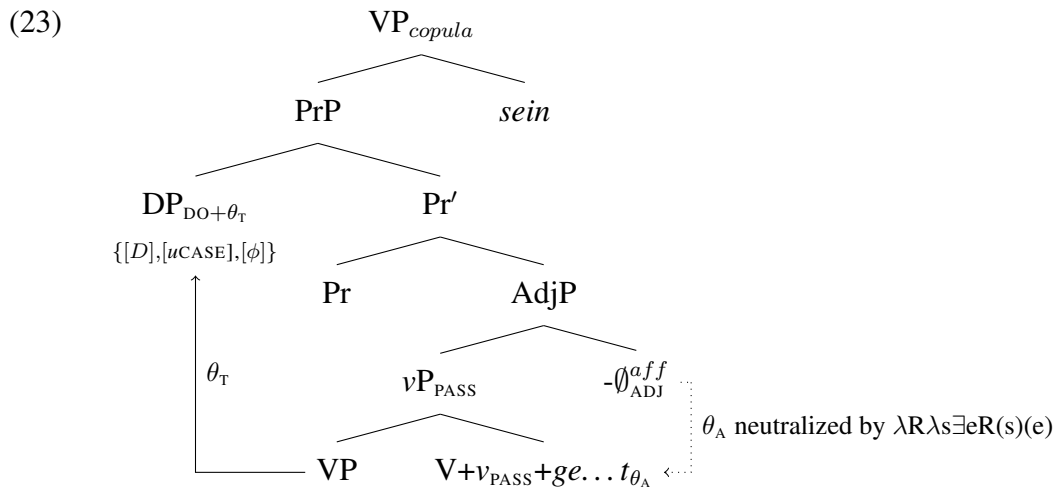
The second one regards the DP_{DO} . Assuming that $-\emptyset_{ADJ}^{aff}$ converts the whole VP into a complex AP, rules out A-movement of the DP_{DO} since the *Lexical Integrity Hypothesis* excludes movement out of a complex unit with word character. It violates locality restrictions (cf. Di Sciullo & Williams 1987). However, at this stage of the derivation, the DP_{DO} seems to be part of a complex unit. Its movement to TP (to become the passive voice subject) would cause a crash.

Since we observe that the DP_{DO} receives nominative case, there is a solution to this puzzle. Levin & Rappaport (1986:643) have already roughly outlined as 'Externalize (*direct object*)'. This idea is captured more explicitly in the PAC (Emonds 2017).

(22) *Passive Adjective Condition* (Emonds 2017:9)

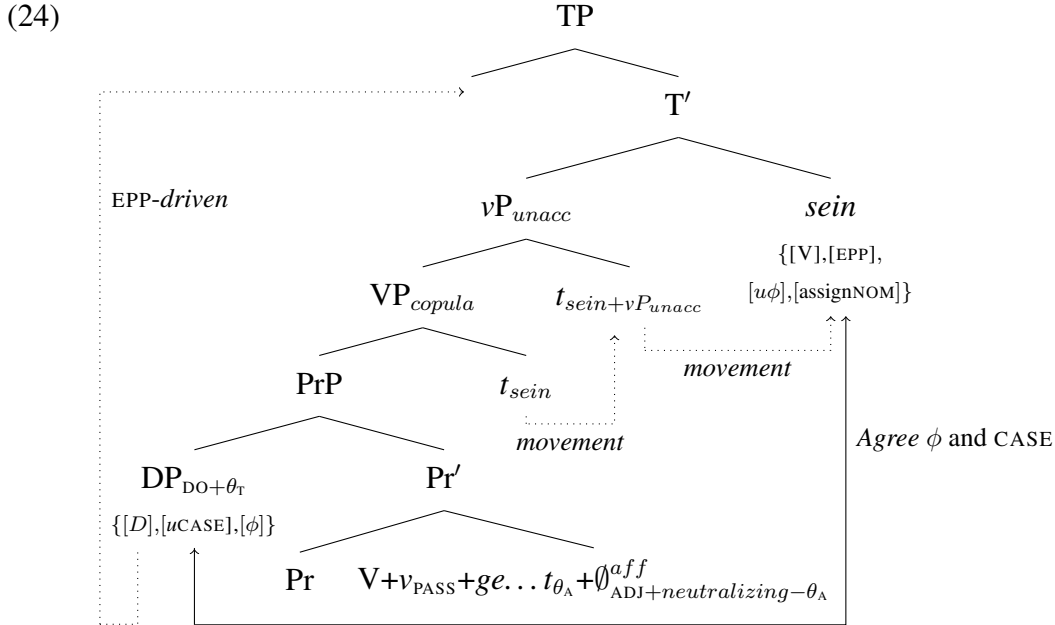
The subject of adjectival passives receives the theta-role that its verb root assigns to a deep direct object in an active VP. In other respects adjectival passives respect the subcategorization of the verb root.

The PAC solves the second problem. The notation in (22) implies that the DP_{DO} is base-generated outside of the VP but θ -marked as θ_T by V (*pace*. an A-movement approach; cf. Bruening (2014)). What position is this? The data above suggest a copula construction. Copula verbs have two core properties. One is that they select small clauses (PrP in the notation of Bowers (1993, 2001)). A PrP relates its subject to the predicate in its complement position. In case of the German stative, this relation is the one of DP_{DO} and the de-verbalized past participle. This provides the missing link. The DP corresponding to the DP_{DO} of an active voice sentence is merged in spec,Pr. The PrP is illustrated in (23).



Now, there is still an open question, namely how the DP_{DO} is case-marked. Copula verbs do not select an EA. Thus, they are conceptionally unaccusatives (Wurmbrand 2001:30f.). In unaccusatives, the internal argument receives NOM from the T-probe. This follows from Burzio's (1986) generalization. For the stative, this leads to the assignment of NOM to the subject of the small clause, the DP_{DO} of a corresponding active voice sentence. See the derivation in (24).

crit ^{erion}	DEMOTION	PROMOTION	PERIPHRA ^{SIS}	IMPL
result	satisfied	not satisfied	not satisfied	partially satisfied

Table 1. Overview on *sein*-stative

3.1.3. Summary

My approach to German *sein*-statives mostly follows the adjectival conversion hypothesis but it adds the vP_{PASS} . This was motivated by the (rare) occurrence *by*-phrase in target states as well as the base position of instrumental adverbial (cf. Frey & Pittner 1998, 1999).

The criteria of canonicity are DEMOTION, PROMOTION, a PERIPHRA^{SIS}, and the availability of IMPL (see (12)). The stative DEMOTES the EA. This is syntactically modelled by a vP_{PASS} . This criterion is fully satisfied. This construction does not satisfy the criterion of PROMOTION since the θ_T -marked argument is not promoted *via* movement but by externalized generation (e.g. Levin & Rappaport 1986; Emonds 2017). Since I identified the ‘*sein*-passive’ as an adjectival passive with an underlying copula construction, the PERIPHRA^{SIS} criterion is not satisfied either. Regarding the IMPL condition, this analysis shows partial satisfaction because of Kratzer’s stativizer. To conclude, this NCP is passive-like and belongs to the second, more peripheral layer of German passive voice.

3.2. A dative conversion?

The dative construction is also subject to linguistic debate on whether or not this construction should be analysed as a passive (Haider 1984a; Reis 1985; Wegener 1985).

The construction is particularly discussed as an on-going grammaticalization process (cf. Askedal 1984, 2005; Abraham 1985; Diedrichsen 2012; Vargyas 2012; Bader & Häussler 2013;

Lenz 2013; Lee-Schoenfeld 2016 a.o.). They argue that the lexical verbs *bekommen*, *kriegen*, and *erhalten* (to a lesser extent) (all correspond to ‘get’) are reanalysed auxiliaries.⁸ In their lexical use, they share the same argument structure. The subject is θ_R -marked, the DP_{DO} carries a θ_T -role, and a source (θ_S) might be expressed by a PP.

- (25) *Tom bekommt einen Apfel von dem Verkäufer.*
 Tom.NOM gets an.ACC apple.ACC from the seller
 ‘Tom gets an apple from the seller.’

German allows secondary predication. As discussed in the last section, past participles also occur as such. This is illustrated in (25') with the second predicate *geschnitten* ‘cut’.

- (25') *Tom bekommt einen Apfel von dem Verkäufer geschnitten.*
 Tom.NOM gets.V-LEX an.ACC apple.ACC from the seller cut.PTCP.PRED
 Intended ‘Tom gets an apple from the seller. This one is cut.’

Crucially, there is neither promotion nor demotion. *bekommen* ‘get’ is still the lexical verb and selects its arguments. This is exactly the analysis advocated by Haider (1984a). However, according to the passive analysis, (25') is the basis for analogous reasoning. Based on similarities with the canonical core (past participle, an agent-like phrase expressed in a *von*-PP, and highlighting of a non- θ_A as the subject), (25') was reanalyzed as (25'') in which *bekommen* is an auxiliary, the past participle selects the arguments, and the subject would be the promoted DP_{IO}.

- (25'') *Tom bekommt einen Apfel von dem Verkäufer geschnitten.*
 Tom.NOM gets.AUX an.ACC apple.ACC from the seller cut.PTCP.V-LEX
lit. ‘A apple was cut by the seller in favour of Tom.’

Assuming the promotion of a DP_{IO} is problematic for standard case theory (Chomsky 1981, 1986, 1995, 2000). For German, there is a well-established difference between structural and inherent case (Haider 1985). While structural case is determined by the structural environment, inherent case is not. They do not undergo passivization – even in impersonal passives (Haider 1984a:33f.). See (4) repeated as (26).

- (26) *Dir/*du wird/*wirst gratuliert.*
 you.DAT/you.NOM become.3.SG/become.2.SG congratulate.PTCP
 ‘You are congratulated.’

Thus, the promotion of the DP_{IO} is highly unexpected and leads to undesirable theoretical entanglements. Oya (2010, 2015), Lee-Schoenfeld (2016), and Lee-Schoenfeld & Twiner (2020) address this issue theoretically. In what follows, I present an analysis which adapts ideas from Oya's (2010, 2015) applicative and unifies this with the vP_{PASS}.

⁸ These verbs all share the same argument structure but differ with respect to the register they are used in. *kriegen* is more colloquial, *erhalten* belongs to the higher register and *bekommen* is more neutral. The fact that there are three contenders for a potential auxiliary in this construction is often taken as evidence for a grammaticalization *in statu nascendi* (Szczepaniak 2011:153). The reason is that *specialization* is taken to be a sub-process of a grammaticalization (Hopper 1991:22). According to Vargyas (2012), Bader & Häussler (2013), and Lenz (2013), *kriegen* and *bekommen* show more passive-like behaviour than *erhalten*. I will use *bekommen* to refer to both.

3.2.1. Data

Structures such as (25'') are actually ambiguous. They might be interpreted with a passive-like reading or as secondary predications. Thus, it is necessary to distinguish those in order to investigate this NCP. In (27) the second interpretation is not available. It would imply that someone gets extracted teeth. This would be odd, according to Szczepaniak (2011:157).

- (27) *Er bekommt die Zähne-e gezogen.*
 he.NOM gets the.ACC teeth-ACC extract.PTCP
 'He gets the teeth extracted.'
 # 'He gets extracted teeth.'

According to Haider (1984a), the past participle in (25') is a predicative. In German, it is not possible to have two separated second predicates modifying the same DP. In (28), *roh* 'raw' modifies the DP_{DO}. Thus, the past participle must have another function (Reis 1985:142).

- (28) *Sie bekommt das Fleisch roh geschnitten.*
 she.NOM gets the.ACC meat.ACC rawr.PRED cut.PTCP
 'She gets the meat cut raw.'

The next question is whether past participle is verbal or adjectival. (28') shows that prefix negation is not possible in this case. Thus, it is verbal.

- (28') *Sie bekommt das Fleisch roh (*un-)geschnitten.*
 she.NOM gets the.ACC meat.ACC rawr.PRED (NEG-)cut.PTCP
 'He gets the meat cut raw.'

Interestingly, this NCP shows positive results for the IMPL-tests. This is not only evidence in favour of a verbal participle but also evidence for a passive past participle and thus for a vP_{PASS} .

- (29) a. *Er bekommt seine Haar-e von dem Friseur geschnitten.*
 he get his hair-ACC by the hairdresser cut.PTCP
 'He gets his hair cut by the hairdresser.'
 b. *Er bekommt seine Haar-e vorsichtig geschnitten.*
 he get his hair-ACC carefully cut.PTCP
 'He gets his hair cut carefully.'

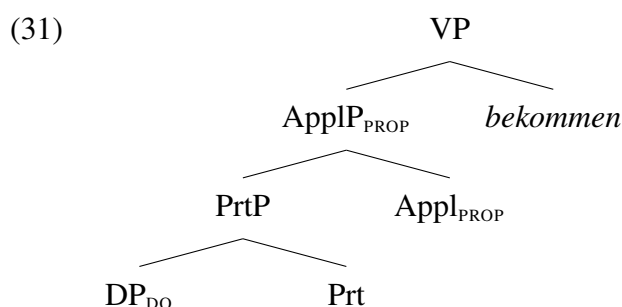
According to these data, the *bekommen*-passive contains a verbal past participle and a vP_{PASS} . However, an unadapted passive analysis is not suitable since DAT is an inherent case. Otherwise, (26) would allow the passivization of the IO.

3.2.2. The analysis

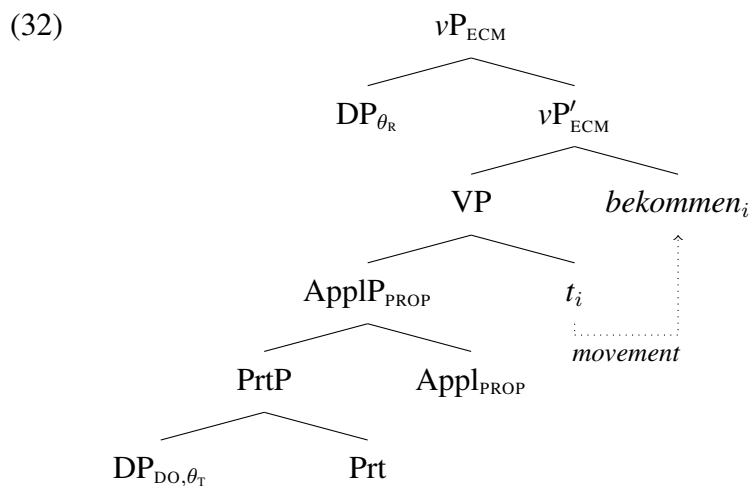
Oya's (2010; 2015) ApplP is based on McIntyre's (2006) assumption that *get* selects two arguments; *x*, *y*. *x* is the possessor and *y* the possessee. The possessee is a proposition which is labeled as PrtP (Participial Phrase). (30c) shows Oya's (2015:299f.) adaption for German.

- (30) a. x [_{DP} He] had y [_{PrtP} a policeman confiscate his passport.]
 b. x [_{DP} He] got y [_{PrtP} his passport confiscated by a policeman.]
 c. x [_{DP} Er] *bekommt* y [_{PrtP} *seinen Ausweis von dem Polizisten beschlagnahmt*.]
 he gets his passport by a policeman confiscated
 ‘He gets his passport confiscated by a policeman.’

(31) shows his derivation. Since the applicative denotes the possessee as a proposition, he labels it as $\text{ApplP}_{\text{Haben}}$ which selects the PrtP (Oya 2015:316). I translated it as $\text{ApplP}_{\text{PROP}}$.



According to his assumption, PrtP cannot assign ACC. Since *bekommen* ‘get’ selects the $\text{ApplP}_{\text{PROP}}$, Oya (2010:14f.) concludes that *bekommen* is an ECM verb. This assumption needs to be made in order to argue for the ACC-assignment of the DP_{DO} . A vP_{ECM} is required to host the EA of *bekommen* ‘get’. (32) shows that no promotion of the DP_{IO} is required. The DP which is θ -marked as the recipient is already in the position that agrees with the NOM-assigning T-probe.



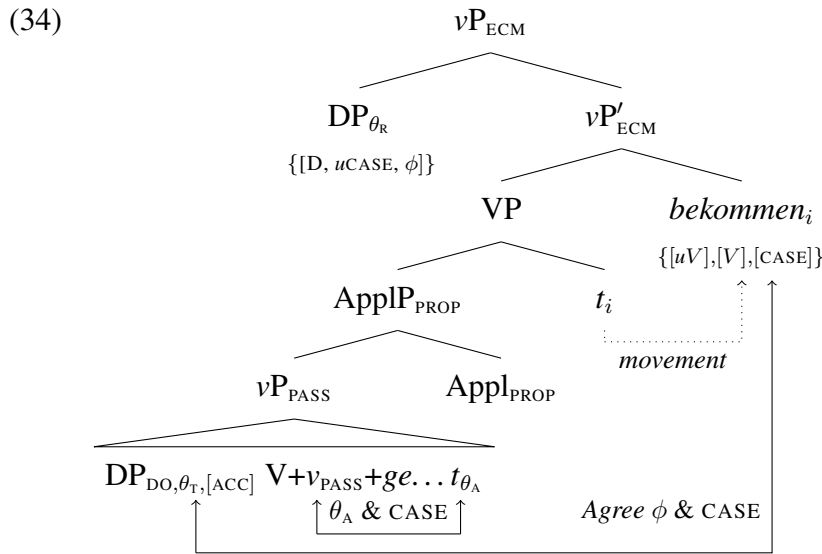
(32), however, does not explain why *bekommen*’s EA is interpreted as the IMPL of the participle as well. Recall that *bekommen* selects the following θ -roles (the underlined one is the external argument. Roles in brackets can be omitted): $\langle \underline{\text{R}}(\text{ecipient}), \text{T}(\text{heme}), (\text{S}(\text{ource})) \rangle$ (33a). The embedded past participle usually has following argument structure $\langle \underline{\text{A}}(\text{gent}), \text{T}(\text{heme}), \text{R}(\text{ecipient}) \rangle$. Since the past participle is verbal, Haider (2010:257) argues that the θ_{A} is implicit. Thus, the argument structure is reduced to $\langle (\underline{\text{A}}), \text{T}, \text{R} \rangle$ (33b). Haider (2010:257) and Oya (2010:14f.) argue that corresponding θ -roles are identified and interpreted

as the same. Oya (2010:14) further assume that θ_s - and the θ_A -role correspond too because of analogous reasoning. The morphological representation of θ_s -role and of the θ_A -role in passive voice are PP. Both claim that *bekommen* ‘get’ behaves like a *semi*-auxiliary. It selects the PrtP as its complement (33c). In (33d), both θ_R -roles are identified and the second one is deleted. The fused θ -grid is shown in (33e).

(33) θ -grid fusion:⁹

- a. *kriegen* ‘get’: $\langle \theta_R, \theta_T, \theta_S \rangle$
- b. *geschnitten* ‘cut’: $\langle (\theta_A), \theta_T, \theta_R \rangle$
- c. *geschnitten kriegen*: $\langle \theta_R, \langle (\theta_A), \theta_T, \theta_R \rangle \rangle$
- d. $\langle \theta_R, \langle (\theta_A), \theta_T, \theta_R \rangle \rangle$
- e. $\langle \theta_R, \langle (\theta_A), \theta_T \rangle \rangle$

(33c–e) implies that the θ_A -role is implicit which is in line with positive evidence for an IMPL. In section 2.2, I introduced a vP_{PASS} to derive such data. I propose that Oya’s (2010; 2015) $ApplP_{PROP}$ does not select a PrtP but a vP_{PASS} . Accordingly, the passive morphology of the past participle carries the θ_A -role. This explains too why Oya’s PrtP cannot assign ACC. Assuming that vP_{PASS} has already assigned ACC to the passive morphology within the complex head, leads to an unchecked [CASE]-feature on the DP_{DO} . Then, a $vECM$ -head would case-mark the DP_{DO} . My proposal is illustrated in (34). Above vP_{ECM} is T which agrees with DP_{θ_R} .



3.2.3. Summary

The *bekommen*-passive does satisfy the DEMOTION-criterion with respect to the past participle’s EA but it does not with respect to the EA of *bekommen*. This also leads to the failure for the criterion of PROMOTION. The morphological requirement of a PERIPHRAISIS is satisfied only

⁹ This fusion also explains why *freie Dative* ‘free datives’ seem to be subject to ‘promotion’. A *free dative* is an extension to an argument structure an introduces a beneficiary (B), recipient, or maleficiery (M). As I argued in footnote 3, the three θ -roles are closely related. Thus, just like θ_A - and θ_S -roles are identified and interpreted as corresponding, I argue that the same happens to θ_R -, θ_B -, and θ_M -roles.

crit ^{erion}	DEMOTION	PROMOTION	PERIPHRA ^{SIS}	IMPL
re ^{sult}	partially satisfied	not satisfied	partially satisfied	satisfied

Table 2. Overview on *bekommen*-passive

partially because *bekommen* behaves like a *semi*-auxiliary. I found positive results for the IMPL because there is a vP_{PASS} selected by the $ApplP_{PROP}$. See Table 2 for an overview.

To conclude, also the *bekommen*-passive is just passive-like and belongs to the second, more periphery layer of German passive voice.

3.3. On modal passives

The modal construction *sein zu* is generally assumed to be a peripheral construction due to the strongly deviating morphology and the modal component. It is therefore not discussed in detail. More detailed descriptions and analyses are provided by Gelhaus (1977), Demske (1994, 1992), and Holl (2010). See (35) for an illustration.

- (35) *Der Marathon ist zu schaffen.*
 the marathon is to accomplish.INF
 potential: ‘The marathon can be done.’
 necessary: ‘The marathon needs to be done.’

Instead of *werden* ‘become’, *sein* ‘be’ occurs as the finite verb. Also the fact that a *zu* ‘to’-infinitive is responsible for expressing the lexical properties of this construction instead of a past participle contributes to the peripheral status of the modal passive construction. The modal component expressed in this construction is either a possibility or a necessity. The subject of (35) is intuitively understood as the argument of *schaffen* ‘accomplish’.

In this section, I will argue that this construction is actually a passive and belongs to the first periphery layer (cf. Holl 2010). I will show that a vP_{PASS} can derive the data.

3.3.1. Data

Unaccusative verbs can neither occur in the *werden*-passive nor in the modal construction (36).

- (36) **Das Schiff ist zu sinken.*
 the ship is to sink.INF

(36) is relevant because it shows that the modal construction and the core construction seem to affect the same constituent which is the DP_{DO} . Like the core, this NCP shows positive evidence for an IMPL. However, *by*-phrases occur less often (Askedal 1987:23f.; Holl 2010:19). AOMs and ‘purpose clauses’ are licit too (37).

- (37) a. *Dieser Preis ist vo-m Käufer auf-zu-bringen.*
 this price is by-the.DAT purchaser PTC-to-bring.INF
 potential: ‘The purchaser can pay this price.’
 necessary: ‘The purchaser has to pay this price.’
- b. *Dieser Preis ist freiwillig auf-zu-bringen.*
 this price is voluntary PTC-to-bring.INF
 potential: ‘This price can be paid voluntary.’
 necessary: ‘This price has to be paid voluntary.’
- c. *Dieser Preis ist auf-zu-bringen, um das Objekt zu erwerben.*
 this price is PTC-to-bring.INF, in order to the object to purchase.INF
 necessary: ‘This price has to be paid in order to purchase the object.’

I presented evidence for an IMPL. Especially in the context of (37c), the question arises whether the infinitivals differ or not. The one in the embedded purpose clause constitutes the predicate of this clause. What is the status of the one in the matrix clause? Is it a mono-clausal or bi-clausal infinitival, i.e. is the *zu*-infinitival projected in a separate clausal domain or not? This would exclude a periphrasis. Pittner & Berman (2021:129–132) discuss some tests to distinguish. The following two provide evidence for defining the infinitival’s status in (38).

- (38) ...*weil ihm das Geld zu übergeben ist.*
 because him the money to transfer.INF is
 ‘...because the money is to be transferred to him.’

Since incoherent infinitivals are bi-clausal, extraposition should be possible. If not, it is evidence for a coherent one. (38’) shows that this is not possible.

- (38’) * ...*weil das Geld ist, ihm zu übergeben.*
 because the money is him to transfer.INF
 ‘...because the money is to be transferred to him.’

The second aims for word order restrictions. In German, pronouns tend to be scrambled to the right of the *Mittelfeld* ‘middle field’ (i.e. all nodes between C and V) into the so-called *Wackernagelposition* ‘Wackernagel position’. If the infinitival *ihm zu übergeben* ‘to transfer to him’ is incoherent, one has to assume a separate middle field. Thus, the unmarked word order would be *weil das Geld ihm zu übergeben ist*. This is not in line with (38).

Further support comes from the fact that even idioms are subject to this phenomenon (39b). The phrase *dem Affen Zucker geben* translates to ‘to let oneself go’. This idiom is obviously mono-clausal (39a).

- (39) a. *Er gibt dem Affen Zucker.*
 he gives the monkey sugar
 lit. ‘He let himself go.’
- b. *Dem Affen ist Zucker zu geben.*
 the monkey.DAT is sugar to give.INF
 lit. ‘He let himself go.’

Following Holl (2010:41), I conclude that the infinitival in the modal NCP is coherent, i.e. mono-clausal.

3.3.2. The analysis

There are different analyses discussed in the literature. Demske (1994:148–151) assumes head incorporation of Baker (1988). The infinitival is selected by *sein*, after merging, the *to*-infinitive and *sein* would form a complex head (40).

(40) weil er_i [_{VP1} [_{VP2} t_i t_{V2}] [_{V1} zu fragen_{V2} sein]] wird.

Holl (2010:157f.) points out that such a complex head rules out the topicalization of the infinitive which can be found however. Thus, it is not the correct derivation.

(41) Zu fragen wird er sein.
to ask.INF will he be
'He will have to be asked.'

Wurmbrand (2001) assumes that the infinitive and *zu* are generated in V which is selected by an unaccusative *sein* which leads to the promotion of the DP_{DO}. In her derivation, the projection hosting *sein* is labelled as XP (2001:17). This analysis implies that *sein* is the passive trigger.

(42) weil er_i [_{XP} [_{VP} t_i zu fragen] sein] wird.

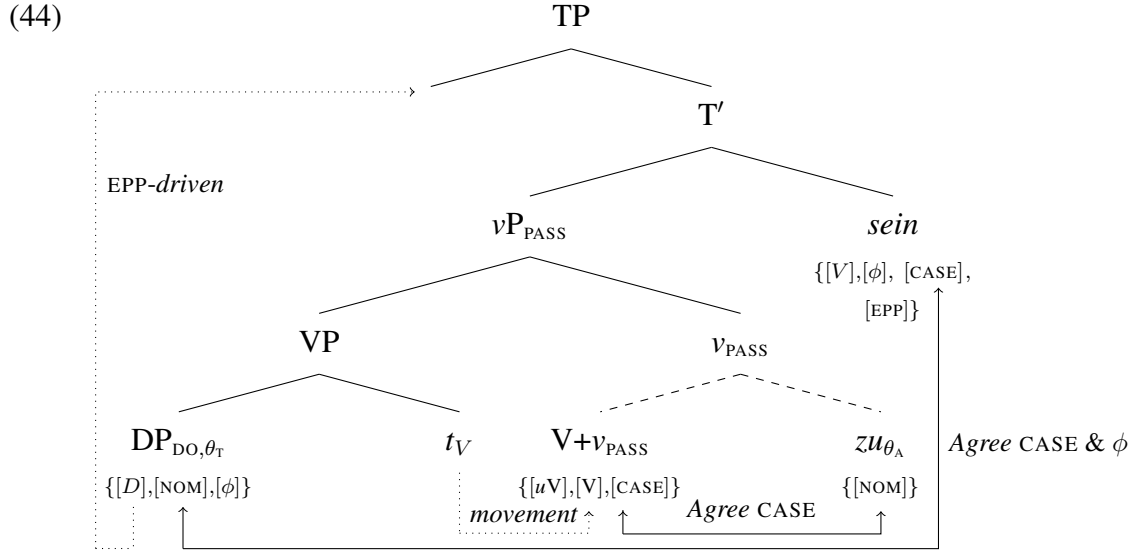
Wurmbrand (2001) claims that this construction derives all kinds of coherent *zu*-infinitives – except *easy-to-please* constructions (Wurmbrand 2001:28). This is problematic since not all *zu*-constructions have the same properties, i.e. not all contain modality (see (37c); Holl 2010:160f.).

Based on the observation that lexical case can be assigned (38, 39b), Holl (2010:162f.) argues that the infinitive should be analysed like a past participle. In Holl's (2010) approach, the infinitive therefore is hosted by a PrtP. He claims that it is a Prt-head which blocks the realization of the EA. Similarly, Haider (2010:258) generalizes that "[a]n infinitival marker *zu* (to) [...] blocks the would-be-nominal argument" (cf. Haider 1984b). This contradicts Wurmbrand's assumption that *sein* 'be' is responsible for the operation. Since PrtP derives the passive effects and the lexical properties, *sein* is analysed as an auxiliary. Holl (2010:166f.) assumes that it is generated in an unaccusative VP_{AUX}. His derivation is illustrated in (43).

(43) weil er_i [_{VP_{AUX}} [_{PrtP} [_{VP} t_i t_V] zu fragen_V] sein] wird.

This derives modal NCP as a 'real' passive. However, I argue that this PrtP makes the wrong predictions. (43) cannot derive data such like (37) because Holl assumes that *zu* 'to' blocks the EA (Holl 2010:166f.). I showed that there is an IMPL. Thus, I claim that a vP_{PASS} can derive (37). The vP_{PASS} introduces the passive morphology which carries the θ_A -role and ACC-case. Of course, the *zu*-infinitival is not a past participle. Recall Holl's observation regarding the parallels of passive past participles and this kind of *zu*-infinitival. I want to argue that this *zu* and *ge...t* are both instances of vP_{PASS}-heads. Following this and similar to *werden* 'become' in (11), I analyse the finite verb *sein* 'be' as an auxiliary generated in T. In (44) illustrates my analysis.

crit ^{erion}	DEMOTION	PROMOTION	PERIPHRA ^{SIS}	IMPL
result	satisfied	satisfied	partially satisfied	satisfied

Table 3. Overview on *zu sein*-passive

3.3.3. Summary

In this section, I advocated an analysis of the modal *zu sein*-passive which proposes that it is a ‘real’ passive. With ‘real’ passive, I refer to the fact that it satisfies the core properties of passives. Thus, one observes evidence for DEMOTION as well as for PROMOTION. By applying vP_{PASS} again, I also explained the evidence for IMPL which satisfied the fourth criterion of the catalogue in (12). The deviating property of this NCP is its morphology and modality. This is the reason why the third criterion, the requirement of a certain PERIPHRA^{SIS} is satisfied only partially. Although it actually has an analytical predicate, it differs in terms of the finite verb and the form of the lexical verb. Table 3 provides an overview on the results. To conclude, surprisingly the construction which differs the most from the core, is actually a passive. Therefore, it is in the first periphery layer.

4. Towards the taxonomy

In this section, I will answer the research questions. The first question (RQa) asked whether German passive(-like) voice constructions share certain properties. I showed that all discussed constructions can be derived with a vP_{PASS} which introduces the passive morphology as an argument in its complex head. This projection evokes the criterion of DEMOTION and of IMPL directly. It leads indirectly to the PROMOTION-criterion since the passive morphology is case-marked with ACC so that DP_{DO} cannot. It is responsible for the PERIPHRA^{SIS}-condition since the sentence needs an auxiliary. Thus, all criteria from the catalogue in (12) go back to vP_{PASS}.

(RQb) regards differences between the core construction and the NCPs and differences be-

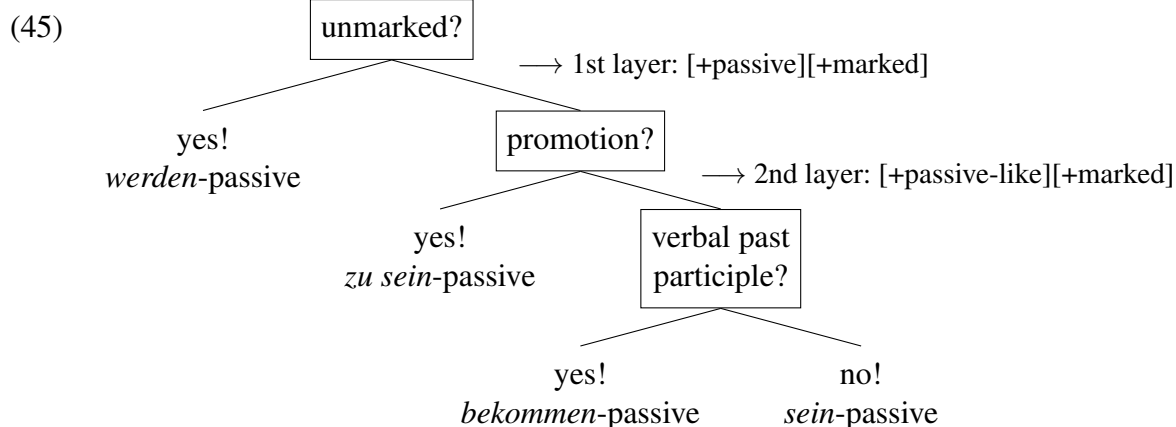
tween them. The verbal domain of the *werden*-passive contains a TP, vP_{PASS} , and a VP. What leads to the non-canonicity of NCP are further projections above the vP_{PASS} -layer or deviating morphological realizations of vP_{PASS} . In the stative case, I argued that it is not a periphrasis but a copula construction. I assume that the vP_{PASS} is selected by a zero adjectival affix which converts the whole projection into an adjective. This is a complement in a small clause (PrP) which is selected by a copula verb. The seemingly *dative*-passive also contains vP_{PASS} . However, in this case, it is selected by an ApplP. This projection is the complement of a *semi*-auxiliary *bekommen*. For the modal variant, I argued that it is a ‘real’ passive which consists of the very same verbal domain as the core. In this case, the realization of the vP_{PASS} was the reason for the non-canonicity. Table 4 provides an overview and also gives the answer to the third research question (RQc) which was aiming towards the taxonomy of the German passive voice landscape.

test	<i>werden</i> - passive	<i>zu sein</i> - passive	<i>bekommen</i> - passive	<i>sein</i> - passive
DEMOTION	yes	yes	yes	yes
PROMOTION	yes	yes	no	no
MORPHOLOGY	yes	(yes)	(partially)	no
IMPLICIT AGENT	yes	yes	yes	(partially)

Table 4. Taxonomy of non-canonical passive construction

It is not surprising that all constructions satisfy the criterion of DEMOTION due to the vP_{PASS} . The stative is the most peripheral because it contains neither a periphrasis nor satisfies the IMPL-condition fully due to the neutralization by $-\emptyset_{ADJ}^{aff}$ nor promotes the DP_{DO} which is base-generated outside of VP, according to the PAC (22). Less peripheral is the *bekommen*-passive because it has an IMPL, but due to the *semi*-auxiliary status of *bekommen* the morphological criterion is only partially satisfied and there is no promotion involved. These two constructions are passive-like because they do not promote the direct object. This is the reason why they belong to the second layer of periphery. The modal NCP, on the other hand, promotes the direct object. It just differs with respect to the morphology. Thus, it belongs to the first periphery layer.

In a more general way, the taxonomy (RQc) can also be represented with the following flow chart. The first question separates the core since it is the only unmarked one. All NCPs add same kind of additional information. The PROMOTION-criterion constitutes the first peripheral layer because it distinguishes ‘real’ passives from passive-like constructions. For passive-like constructions, the past participle indicates whether a construction is more or less canonical. If it is verbal it tends to assimilate more to the core, if not, then, it is more peripheral.



5. Conclusion

In this paper, I have shown that the German core construction and the NCPs contain a vP_{PASS} . This projection is based on the traditional passive assumption by Baker et al. (1989) and introduces the passive morphology which is an argument.

The investigation of the most prominent German NCPs also shows that differences are due to further projections above the vP_{PASS} or a deviating morphological representation of the head. Finally, based on my catalogue of criteria, I developed a way to determine whether or not and if so to what extent a passive construction is canonical. I showed that the German voice periphery can be distinguished into ‘real’ passives (the modal-passive) and passive-like constructions (the stative and *bekommen*-passive).

However, further research has to be done. More NCP-constructions need to be investigated since the three discussed in this paper are just the most prominent ones. In Zöfelt (2023), I also discussed even more peripheral variants, such like the *haben*- and the *bleiben*-stative. Another interesting question is whether middles also contain a vP_{PASS} and how other modal variants behave syntactically.

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Abbreviations

A	agent-like argument	M	maleficent-like argument
ACC	accusative	NEG	negation
ADJ	adjective	NOM	nominative
AOMs	agent oriented modifier	PASS	passive
AUX	auxiliary	PRED	predicative
B	beneficient-like argument	PTC	verbal particle
COM	comparative	PTCP	participle
DAT	dative	R	recipient-like argument
DO	direct object	S	source-like argument
EA	external argument	SG	singular
EXPL	expletive	SUPER	superlative
IMPL	implicit argument	T	theme/patient-like argument
INF	infinitive	V-LEX	lexical verb
IO	indirect object		

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Current linguistic changes in contemporary Italian

The cases of *non io che* and *essere tipo*

Sarah Rossi & Tommaso Sgrizzi

This study investigates two emerging syntactic constructions in contemporary Italian digital discourse: *non io che* and *essere tipo*. Drawing on a corpus of data from Twitter and Threads, the research explores how these structures, influenced by English analogues like *not me* [verb]-ing and *be like*, are integrated into Italian grammar. Quantitative analysis reveals their productivity, especially among younger speakers. We examine the syntax and pragmatic functions of both constructions, focusing on focal interpretation in *essere tipo* and expletive negation in *non io che*. The findings shed light on cross-linguistic influence and ongoing grammatical change in Italian netspeak.

1. Introduction

On social media, younger generations are increasingly adopting syntactic structures previously unattested in contemporary digital Italian (Fiorentino 2024). This study investigates the productivity of the constructions in (1) and (2) through a data-scraping analysis, namely a collection of quantitative data drawn from social media, a privileged context for observing linguistic change in progress. Moreover, it aims to provide a formal analysis of the two constructions in a comparative perspective.¹

- (1) Non io che toglierei già oggi l'albero.
NEG I.NOM that remove.PRES.COND.1SG already today the tree
'Not me already wanting to take the (Christmas) tree down today.'

¹ The examples presented throughout this text were obtained through the online data scraping procedure described in Section §2, and similar sentences can be easily found online.

- (2) Relazioni a distanza essere tipo [SAD EMOJI].
 Relationship at distance be.INF like
 ‘Distance relationships be like [SAD EMOJI].’

In (1), the *X.com* user communicates that it is unexpected and ironic that they already want to take down the (Christmas) tree: negation does not reverse the polarity of the sentence. In (2), the *Threads* user expresses their feelings about long-distance relationships. Consider the English counterparts of (1) and (2), reported in (3) and (4), respectively (Morris 2021; Pereira 2023; Rossi et al. 2025):

- (3) Not me eating alone.
 (4) Girls be like I’m ready for the tour!

We suggest that (1) and (2) originate from contact with the English counterpart, as exemplified in (3) and (4), raising the question of how Italian grammar accommodates these structures compared to their English equivalents.

2. Quantitative analysis on the two phenomena

To conduct our analysis, we created a web corpus from Italian social media posts. We collected data from *Twitter* (now *X.com*) and *Threads*² using web-scraping tools implemented in Python, employing a mixed-methods approach combining computational extraction techniques with manual annotation and qualitative analysis. For *non io che* data collection, we used *twscrape* (Kens 2023) to gather tweets posted on *Twitter* within a specific time frame, focusing on the days surrounding the *Sanremo Music Festival*—a major Italian cultural event that generates substantial online activity. This approach enabled us to compare the frequency of *non io che* structures in *tweets* from the 2022 and 2023 festivals. We chose the *Sanremo Festival* as our target period because it provides a well-defined window during which to assess the productivity and presence of the phenomenon. Notably, the Festival has seen a steadily increasing TV share, rising from an average of 58% in 2022 to 63% in 2023 (Auditel data; Eurofestival News 2025). Through manual inspection, we excluded sequences involving *not-verb-that* patterns and other irrelevant cases to ensure that the collected data accurately reflected our target structures. An example of a *twscrape* command is shown below.

- (5) `twscrape search “non * che” (#sanremo2022 OR #sanremo OR #ariston OR #amadeus)
 lang:it since:2022-02-06 until:2022-02-07’ –limit=5000 > 2022-06-sanremo.txt`

The function of (5) is to call the ‘*twscrape*’ script and initialize a *twitter* search for tweets containing the exact phrase “*non * che*” (where * represents any word) along with at least one of the specified hashtags (#sanremo2022, #sanremo, #ariston, or #amadeus, i.e. the name of the presenter), written in Italian, posted between February 6-7, 2022, (the dates of the Festival) limiting results to 5000 tweets and saving the output to a text file named “2022-06-sanremo.txt”. The results are shown in Figure 1.

² The reason we collected data from two different sources is that we aimed to provide a cross-platform assessment of the phenomenon using the two major text-based social media apps currently available.

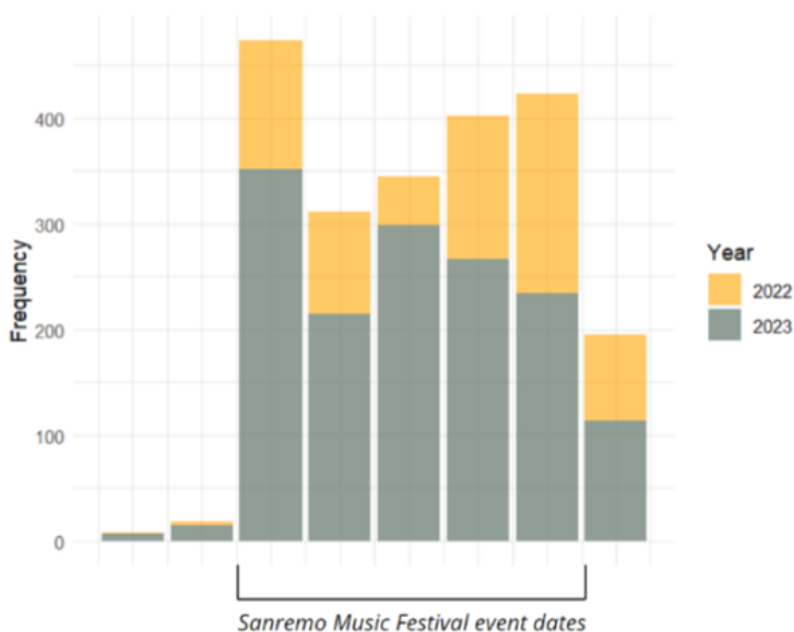


Figure 1. “non io che” structures on Twitter (Sanremo 2022-2023).

We found 2,148 instances of *non io che* structures in the hashtag search for the 2022 edition of *Sanremo*, and 1,478 instances for the 2023 edition. We attribute the decrease in *non io che* sentences to factors external to the productivity of the construction itself, which remains evident in the data. A likely explanation involves the events surrounding Elon Musk’s acquisition of *Twitter*, which triggered widespread reactions online and prompted many users to leave the platform (Faure 2022). Since the acquisition was finalized in late October 2022 (Bergeson 2022), it is plausible that *Sanremo* 2023, which took place a few months later, experienced a decrease in overall *tweet* volume. Another possible explanation for the decreasing trend we observed may lie in the gradual naturalization of the construction within Standard Italian. Paradoxically, this structure may have been initially overrepresented in Italian netspeak (Zaga 2012; Corino 2019) precisely because of its innovative and marked character, and has since become less salient due to a normalization effect. Under this view, the decreasing frequency of *non io che* structures in social media data may reflect not a decline in usage, but a process of enregisterment and subsequent normalization (Agha 2003; Eckert 1999; McCulloch 2020), similar to other phenomena that show initial media saturation followed by linguistic integration (cf. Tagliamonte & Hudson 1999). While this hypothesis remains to be tested empirically, we anecdotally note that we continue to hear people using the construction in everyday speech around us and on social media. We report here a very recent *Instagram* post³, where in a short video about her outfit a girl utters:

- (6) Non io che mi stavo dimenticando della borsa.
 NEG I.NOM that me.REF stay.PST.IMPERF.1SG forget.GER the bag
 ‘Not me forgetting my bag.’

³ Instagram Reel (Instagram post in a short video format) posted May 17, 2025, retrieved May 31, 2025, <https://www.instagram.com/reel/DJw67PEtGF/?igsh=OGZoOHMwZnNzYWts>.

While a precise characterization of the interesting prosodic properties of *non io che* structures awaits future research (c.f. Pereira 2023 for a first characterization of the English equivalent), we report this video also to leave an empirical trace of the prosodic contour of these constructions. For the time being, we note that based on a purely auditory analysis, the prosodic prominence is realized on the element after the negation *non* with a high intonation, while the rest of the utterance is realized with a low intonation (Guido Formichi, personal communication), which is standard for postfocal material in Italian (Bocci 2013). Moreover, in this particular video there is a lengthening on the verb *dimenticando* ‘forgetting’, presumably for expressive purposes.

For *essere tipo*, we used *Threads*, a new text-based social network recently launched by *Meta*. Our choice was guided by getting data from the two main text-base social media platforms available at the moment. Due to its novelty, no existing tools like *twscrape* were available, so we developed a custom Python script to automatically extract posts from HTML pages that we manually saved from the browser. Since *Threads* did not yet offer a personalized search engine with time filters or wildcard search options (such as *Twitter*’s asterisk feature, cf. (5)), we searched for the exact phrase *essere tipo* ‘be like’ and then manually filtered the posts to retain only those that contained the target construction, removing any noise. We gathered 530 instances of *essere tipo* structures, and then coded them by subject type (Figure 2).

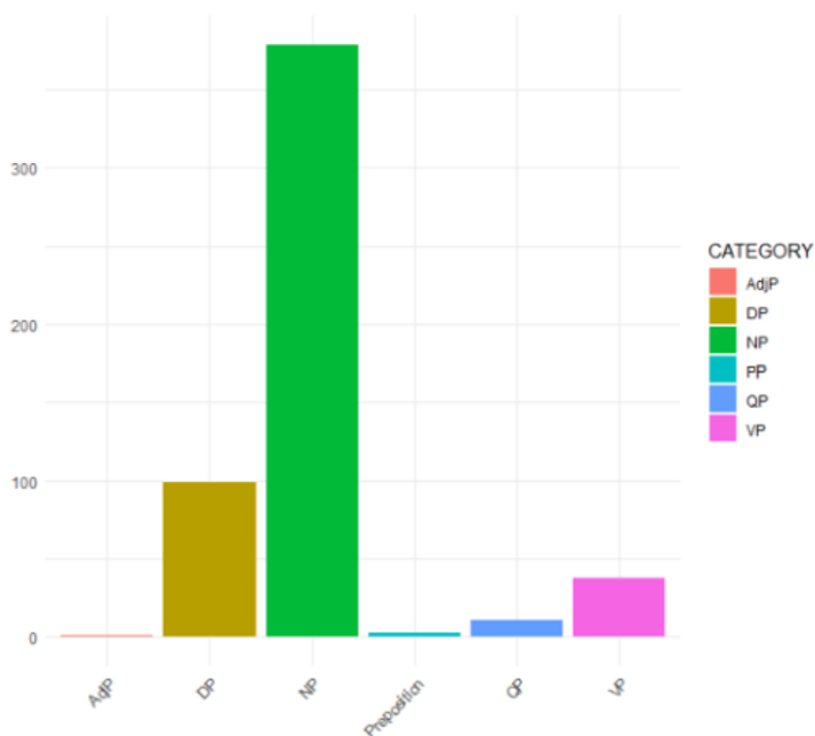


Figure 2. Types of subjects found in ‘*essere tipo*’ sentences on Threads.

The distribution of subject types in *essere tipo* constructions reveals a striking predominance of noun phrases (NPs), which account for the majority of cases, followed by determiner phrases (DPs) and verb phrases (VPs). This skewed distribution suggests that *essere tipo* primarily functions to frame nominal predications. In the next section, we provide a formal analysis of this

construction and demonstrate how the pattern raises interesting questions regarding the syntax of nominative phrases in Italian. In Section §4, we then turn to the formal analysis of *non io che* structures.

3. A formal analysis of ‘essere tipo’ structures

The *essere tipo* construction mirrors English quotative *be-like*, used to introduce direct speech (7), internal thought (8), or expressive content (9) (cf. Haddican et al. 2012). *Threads* allows users to share other people’s posts by adding a comment alongside them. We represent this using the notation in (8), where ‘A’ denotes the newly added comment, and ‘B’ represents the shared post that User A is commenting on. When posts include an image, we provide a description of such image within square brackets, as in (9).

(7) exes be like “I gave you everything” yeah, trust issues.

(8) **A:** Human experience be like.

B: I wanna be loved the way I love.

(9) Balkan countries be like.

[a photo of grilled meat within a breakfast menu.]

The Italian counterpart presents the same distribution of meanings: direct speech (10), internal thought (11), or expressive content (12).

(10) **A:** Guastafeste essere tipo:
Killjoy be.INF like:
‘Killjoy be like:’

B: Ma lo sapete che “essere tipo” in italiano non
But it.CL.ACC.3SG know.PRES.2PL that “be.INF like” in Italian NEG
significa un cazzo di niente?
means a damn of nothing
‘Don’t you know that *be like* doesn’t mean a damn thing in Italian?’

(11) Prime video essere tipo: non solo devi pagare l’abbonamento, ma se
Prime video be.INF like: NEG just must.IMP.2SG pay.INF the subscription, but if
non vuoi rotte le palle con 4 pubblicità, devi pagare
NEG want.PRES.2SG broken the balls with 4 ads, mustIMP.2SG pay.INF
ancora di più.
even of more

‘Prime video be like: not only you must pay the subscription fee, but if you don’t wanna be bothered with four ads, you must pay even more.’

- We begin our analysis by presenting Marano's (2013) analysis of *tipo*, the equivalent of English *like*. Marano argues that *tipo*'s meaning fluctuates across contexts, ranging from hedging and approximation ('kind of', 'about') to exemplification ('for example') and clarification ('that is'). Particularly significant is the proposal that *tipo* operates as a focal device activating the informational focus field of an utterance. This means it often introduces new, contextually un presupposed information, contributing directly to the informational structure of the sentence. In cases where *tipo* appears at the onset of a new clause or thought unit, Marano suggests it may also signal a hybrid focus field, both semantically prominent and intonationally marked. Ultimately, *tipo* is redefined not as a pragmatic fluke of youth language, but as a flexible and meaningful discourse marker that reflects complex interplay between syntax, prosody, and pragmatics in contemporary Italian. In (13) we provide a sketched representation of his analysis (adapted from Marano 2013:477).

- Our analysis of *essere tipo* structures will then depart from the discourse properties of *tipo* ‘like’. Transposing Marano’s insights into a more formal syntactic framework may lead us to propose the following representation (adopting a cartographic analysis of the Italian CP, cf. Rizzi 1997; Rizzi & Bocci 2017).

- More specifically, we build on Marano's insight that *tipo* can yield a focal interpretation without requiring constituent movement or pitch raising. Based on this, we propose that *essere tipo* is merged as the head of a Focus Phrase (FocP). This raises the question: from where does the topic-marked element move? Our analysis takes advantage of the presence of the copula and assumes that *essere tipo* introduces a small clause in the sense of Moro (Moro 1997, 2006). The subject is then raised to the Topic position above the FocP headed by *essere tipo*, while the predicate remains *in situ*.

Interestingly, we found no cases in which the subject remains in situ while the predicate raises instead—a configuration that is otherwise possible in standard copular constructions in Italian. A possible explanation for this restriction may lie in the absence of T in these constructions, as suggested by the lack of agreement on the copula. Without T, the EPP (in the sense of Chomsky 1982) would also be absent. Under Moro's analysis, the EPP in Italian can be satisfied by either the subject or the predicate. However, the nature of the available landing site (i.e., TopP) introduces interpretive constraints that may disfavor predicate fronting and instead favor the promotion of the subject (for discussion on the many interpretive properties associated with different topic positions, see Frascarelli 2008; Frascarelli & Hinterhölzl 2008).

- (15) [Topic [DP *umore di oggi*] [FocP [Foc' *essere tipo* [SC [DP ~~*umore di oggi*~~][DP *crostatina sbriciolata in fondo allo zaino*]]]
'Today's mood be like crumbled tart at the bottom of the backpack.'

Another independent evidence for the lack of T lies in the absence of negated *essere tipo* sentences in our corpus, as negation is traditionally assumed to select a TP complement following Zanuttini (1997). The distributional asymmetries observed—particularly the fixed subject-predicate order—follow naturally from these structural and discourse-related factors, reinforcing the view that *tipo* has been reanalyzed as part of a dedicated Focus projection.

3.1. On the nature of the subjects in 'essere tipo' sentences

Our data from online discourse (n = 530 threads) reveal remarkable flexibility in the types of constituents that may serve as subjects in *essere tipo* constructions (Figure 2). These range from noun phrases (16), definite descriptions (17) quantificational phrases (18), to entire verbal phrases (19) and even clausal complements (20). Such a significant variation in the type of subjects shows the productivity of the *essere tipo* construction.

- (16) *Ragazze essere tipo:*
 Girls be.INF like:
'Girls be like:'
 [a screenshot of the notes app]
- (17) *L'albero di Natale che l'universitario desidera, essere tipo:*
 the tree of Christmas that the university student wish.PRES.3SG, be.INF like:
'The Christmas tree wished by university students be like:'
 [image of a tree having validated exams instead of Christmas balls.]
- (18) *Ogni istante della mia vita essere tipo:*
 every moment of my life be.INF like:
'Every moment of my life be like:'
 [screenshot of an incoming call from 'Overthink'.]
- (19) *Parlare con me essere tipo:*
 talk.INF with me.1SG.ACC be.INF like:
'Talking to me be like:'
 [screenshot of an SMS exchange.]
- (20) *Quando ho saputo di HS4 a mezzanotte essere tipo:*
 When have.PRES.1SG hear.PST of HS4 at midnight be.INF like:
'When I heard about HS4 at midnight be like:'
 [selfie of a man (the user) with a neutral expression.]

Notably, we also observe the overwhelming presence of bare plural subjects (cf. Figure 2), a phenomenon otherwise restricted or marginal in standard Italian syntax. *Threads* such as (21) raise some interesting theoretical questions, as Italian typically disallows bare plurals in subject position (cf. Krifka et al. 1995; Carlson & Pelletier 1995a) when interpreted generically (**uomini sono qui* ‘men.GEN are here’).

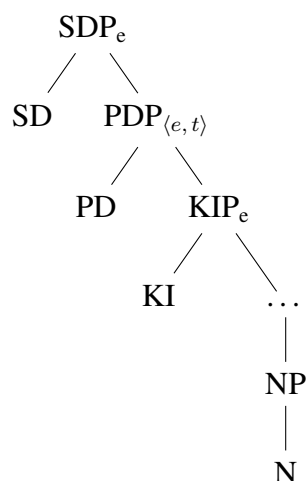
- (21) Uomini essere tipo gli rispondi al messaggio già
 men be.INF like them.DAT.3PL reply.PRES.2SG at-the message already
 ti vedono all’altare.
 you.ACC.2SG see.PRES.3PL at the altar
 ‘Men be like: you reply to their message and they already picture you at the altar.’

Note that a similar generic reading is as well available in *essere tipo* sentences with definite DPs.

- (22) Gli uomini essere tipo comicità è quando misoginia.
 the men be.INF like comedy is when misogyny
 ‘Men be like: comedy is when something is misogynistic.’

Such acceptance of bare plurals with generic interpretation in *essere tipo* structures suggests a departure from traditional constraints on noun phrase licensing in Italian. According to the analysis offered in Zamparelli (2000) within a fine-grained representation of the DP layer, English bare plurals can be interpreted as kinds via LF-movement to the specifier of a Strong-Determiner Phrase (SDP), licensing the empty determiner head, while Italian normally requires an overt determiner for such readings.

(23)



(Zamparelli 2000:16)

We hypothesize that *essere tipo* structures, in order to allow for the generic reading in bare plurals constructions, must allow a form of LF-movement analogous to the English case. This

possibility, absent in standard Italian, may lead one to speculate on a potential parametric shift⁴, conditioned by genre and register. In this sense, the linguistic ecology of netspeak—with its interactivity, hypertextuality, and multimodality (Fiorentino 2024)—provides fertile ground for such innovations to emerge, stabilize, and potentially spread into wider usage. More specifically, the presence of both bare plurals and definite plurals giving rise to the same interpretation (cf. (21) and (22)), leads us to propose the following analyses.

In this light, *essere tipo* constructions may be seen not merely as stylistic borrowings but as sites of genuine syntactic change. While these developments are currently limited to informal, online contexts, their persistence and diffusion merit further investigation.

4. A formal analysis of ‘non io che’ structures

In this section we provide an introduction on the origin and use of the *non io che* construction, followed by a documentation and description of their properties, focusing on its syntax and interpretation. Then, we turn to the formal analysis.

To the best of our knowledge, the English equivalent of the *non io che* construction has been noticed for the first time by Morris (2021) in a blogpost, where he discusses the possible origin of the structure and shows its productivity in a data scraping study. Morris (2021) finds that these constructions are productive in online discourse and are present mostly in “*small-to-medium subreddits whose readership is especially gay, female, young, or some combination of the three*”. Reddit is a social media platform structured around user-created communities known as subreddits, each dedicated to a specific topic, interest, or theme (Anderson 2015). A later investigation by Pereira (2023) shows via a survey that it is mostly young people who are familiar with the construction and use it. The earliest attestations of these sentences can be found on *Twitter* and date back to 2008 (Morris 2021), originating in posts written by speakers of African American Vernacular English (AAVE). However, it is only in recent years that they have spread widely enough to enter not only colloquial English—thus extending beyond AAVE and the slang of drag culture and the LGBTQIA+ community—but also other languages, such as Italian and French, as first observed by Rossi et al. (2025) and further discussed in the present work.

4.1. Syntactic and interpretative properties of ‘non io che’ structures

The *non io che* construction in Italian features a distinctive syntactic configuration, which begins with the sentential negative marker *non* ‘not’, followed by a nominative subject, the complementizer *che* ‘that’, and a finite verb. In English, the equivalent construction involves the negative marker *not*, followed by an accusative subject and a non-finite gerund. These two dif-

⁴ A reviewer suggests considering an alternative explanation, drawing on recent works (Bidese 2023; Bidese & Tomaselli 2021; Tomaselli 2023). This perspective argues that language contact can operate superficially, affecting linear patterns without altering the deeper syntactic core. A specific example given is the hypothesis that a determiner is present in the Italian structure but subsequently deleted at PF, which would explain the construction without requiring a parametric shift. While we acknowledge the plausibility of this approach, our analysis offers a principled account of the syntactic changes necessary to explain the acceptance of bare plurals with a generic interpretation. It is completely possible that the situation suggested by the reviewer, in which the determiner is simply deleted at PF, constitutes a stage prior to the formal re-analysis proposed here.

ferent grammatical architectures can be summarized as follows.⁵

- (24) **ITALIAN:** negative marker *non* + nominative subject + complementizer *che* + finite verb:

Non io che mangio mezzo chilo di ciliegie da sola.
 NEG I.NOM that eat.PRES.1SG half kilo of cherries by myself
 ‘Not me eating half a kilo of cherries by myself.’

ENGLISH: negative marker *not* + accusative subject + gerund:

Not me eating half a kilo of cherries by myself.

Therefore, we observe that in Italian this peculiar construction has been adapted with certain grammatical constraints: since gerunds typically do not appear in root contexts (Nespor 1978), finite morphology is used instead, along with a complementizer capable of licensing a finite verb. In both constructions, the overt expression of the subject is mandatory—a pattern which is not always necessary for both English and Italian, albeit for different reasons. Italian, being a pro-drop language, generally allows null subjects; whereas in English, gerunds may also appear with a non-overt pronoun, specifically an arbitrary pronoun (PRO_{arb} , following Roberts 2019 cf. also Lebeaux 1984; Stowell 1982).

- (25) [PRO_{arb} becoming a movie star] involves [PRO_{arb} being recognized by everyone]

(Lebeaux 1984, quoted in Roberts 2019:266)

Therefore, the obligatoriness of having an overtly realized subject is a distinctive feature of *non io che* constructions, including their English equivalents. Similarly to *essere tipo* constructions, *non io che* sentences allow for a broad range of subjects, spanning all grammatical persons in both singular and plural number. These subjects may be expressed as nominative pronouns, proper names, or full DPs. This distribution supports the analysis of *non io che* as a productive construction, rather than an idiomatic or fossilized form, paralleling *essere tipo* in its integration into contemporary Italian grammar—particularly in colloquial registers and online discourse. The examples below illustrate the diversity of subject types attested in *non io che* constructions:

- (26) Non tu che gli credi pure.
 NEG you.NOM.2SG that to.him.CL.M.3SG.DAT believe.PRES.IND.2SG also
 ‘Not you actually believing him.’

- (27) Non lei che registra il video in bagno.
 NEG she.NOM that record.PRES.IND.3SG the video in bathroom
 ‘Not her recording the video in her bathroom.’

⁵ A reviewer points out that in English, such sentences may correspond to “Not me (while I’m) eating half a kilo...”, and that some Italian speakers actually use the form “Non io mentre ...” which directly translates this English version. We agree with the reviewer in that it would be interesting to pursue a corpus study on this other form.

- (28) Non noi che imploriamo San Marino di darci i
 NEG we.NOM that plea.PRES.IND.1PL San Marino to give=us.CL.1PL.DAT the
 punti ma poi noi non li diamo a loro.
 points but then we NEG them.CL.M.3PL.ACC give.PRES.IND.1PL to them
 ‘Not us begging San Marino for points and then not giving them any in return.’
- (29) Non voi che pensate di conoscerli
 NEG you.NOM.2PL that think.PRES.IND.2PL of know-INF=THEM.CL.M.3PL.ACC
 veramente lmao.
 truly laughing
 ‘Not you thinking you really know them.’
- (30) Non loro che stanno parlando di strategie da un’ ora.
 NEG them that stay.PRES.IND.3PL talk.PRES.PART of strategies from one hour
 ‘Not them talking about strategies for the past hour.’
- (31) Non Maria che videochiama Annalisa, meraviglia.
 NEG Maria that videocall.PRES.IND.3SG Annalisa, wonder
 ‘Not Maria videocalling Annalisa, awesome.’
- (32) Non la mamma che sgrida il figlio perché risponde
 NEG the mother that scold.PRES.IND.3SG the son because answer.PRES.IND.3SG
 male al papà mi sto sentendo male [SKULL EMOJIS].
 badly to the dad I am feel.PRES.IND.1SG bad
 ‘Not the mom scolding her son for talking back to his dad: I’m literally losing it.’

We adopt the label *non io che* based on the most frequently attested subject in our data—first person singular *io* in the nominative case. However, as noted, other definite subjects are fully grammatical in this structure. In contrast, bare plurals (cf. (33) and (34)) and generic indefinite are typically excluded⁶, unlike in *essere tipo* constructions:

- (33) *Non bambini che giocano rumorosamente alle 7 del mattino.
 NEG kids that play-PRES.IND.1PL loudly at the 7 of.the morning
 ‘Not kids playing loudly at 7 a.m.’

⁶ Regarding the ungrammaticality of generic subjects in *non io che*, a reviewer asks whether constructions like *non i bambini che piangono sempre in treno* (‘not the children who always cry on the train’) could be acceptable. The prediction is negative: despite the relative clause, the subject remains generic, as shown by *sempre* (‘always’), which marks habitual aspect typically linked to genericity (Carlson & Pelletier 1995b; Cinque 1999). We therefore do not expect such examples in netspeak, or only very rarely as marked instances; a systematic investigation is left for future work.

- (34) Non i bambini della scuola sotto casa che giocano rumorosamente
 NEG the kids of the school under home that play.PRES.IND.1PL loudly
 alle 7 del mattino.
 at the 7 of.the morning
 ‘Not the kids from the school down the street playing loudly at 7 a.m.’

As these examples show, if the subject is indefinite or generic and denotes a kind (Carlson & Pelletier 1995b), it is not compatible with the *non io che* structure.

In terms of interpretation, a (young) speaker uttering a *non io che* structure intends to convey their attitude towards a state of affairs which exceeds what is usually expected. This generates a surprising, ironic, funny, amusing, sarcastic flavor in the utterance. They differ from canonical assertions exactly because of this peculiar interpretive flavor: it is the construction as a whole, with its geometric and structural properties, that compositionally contributes to generating the ironic and distinctive interpretation of these forms.

To show this aspect, let us start with a simple test. By eliminating the negative marker from the *non io che* structure in (35), the ironic/surprising flavor dissolves, leaving the structure as a ‘neutral’ assertion which may be used as a caption under a social media post (36):

- (35) Non lei che registra il video in bagno.
 NEG she.NOM that record.PRES.IND.3SG the video in bathroom
 ‘Not her recording the video in her bathroom.’

The person expressing the sentence above displays a sense of irony and surprise at the fact that she is recording a video in her bathroom. The context involves a video featuring global pop star Ariana Grande, who is seen addressing the camera directly. What stands out, and what makes the utterance ironic, is that, despite her celebrity status and presumed access to luxurious filming spaces, she appears to be filming in an ordinary bathroom. This incongruity is emphasized by the visible white bathroom tiles in the background, which highlight the contrast between public expectations of wealth and glamour and the surprisingly mundane setting she has chosen.

- (36) Lei che registra il video in bagno.
 she-NOM that record-PRES.IND.3SG the video in bathroom
 ‘Her recording the video in her bathroom.’

Therefore, the role of negation is crucial in a *non io che* structure, particularly regarding its interpretation. It is most peculiar that negation does not reverse the polarity (Horn 1989) of a *non io che* structure: when a sentence appears with a negative marker, the first expectation one has is that it would be negative in polarity and meaning. Instead, a *non io che* construction is undoubtedly affirmative: in both (35) and (36), Ariana Grande is indeed filming a video in her bathroom. What changes is that in (35), the sentence not only expresses its propositional content but also the speaker’s attitude about the event, conveying surprise, irony, and sarcasm often in a (self-)deprecating way. The literature offers quite an extensive discussion on the role of negation when it goes beyond its canonical use of a truth-conditional operator. When that is the case, this type of negation has been called, among other labels, pleonastic or expletive (Espinal 1992, 1997; Greco 2019; Tsiakmakis & Espinal 2022; Wood 2014; Yoon 2011). It is the latter

term that we adopt here, referring to the kind of negative marker that is present in *non io che* constructions as Expletive Negation (EN). This is not simply something we postulate: according to previous literature (Greco 2017), a negative marker instantiates EN when compatible with Positive Polarity Items (PPIs, such as *già* ‘already’) and incompatible with Negative Polarity Items (NPIs, such as *affatto* ‘at all’). This is exactly what is observed in *non io che* structures:

- (37) Non io che sono già stanca dopo aver letto due pagine.
 NEG I.NOM that am already tired after having read two pages
 ‘Not me being already tired after having read two pages.’

- (38) *Non io che sono affatto stanca dopo aver letto due pagine.
 NEG I.NOM that am at all tired after having read two pages
 ‘Not me being at all tired after reading two pages.’

As shown above, the presence of the expletive negative marker is crucial for conveying the distinctive interpretation of *non io che* structures, which disappears in its absence. For this reason, we do not use the term expletive as synonymous with ‘semantically vacuous’. Rather, following Greco’s (2017, 2019, 2020) work on similar constructions in Italian, namely Surprise Negation Sentences (Snegs), we propose that EN in *non io che* constructions functions as an operator, similar to standard negation. However, instead of targeting the propositional content of the sentence, it operates on a different layer, the propositional one. We will explore this view in detail the following subsection. Another important aspect of *non io che* structures is that they can be used as answers to propositional questions, such as ‘What happened/What is happening?’. This signals that they convey new information. Indeed, they are employed mostly on social media when users may write posts out of the blue or in reply to other people’s posts:

- (39) A: Cosa succede?
 What happen.PRES.IND.3SG
 ‘What is happening?’
 B: Non io che mangio mezzo chilo di ciliegie da sola.
 NEG I.NOM that eat.PRES.IND.1SG half kilo of cherries by myself
 ‘Not me eating half a kilo of cherries by myself.’

On a more structural level, *non io che* constructions are strictly root and cannot be embedded. This restriction is crucial for a formal analysis, as it distinguishes *non io che* structures from superficially similar constructions such as clefts. While clefts might intuitively resemble a non-elided variant of *non io che* structures, they differ in a key respect: clefts allow embedding (40b, 40c), whereas *non io che* constructions do not (40a), as illustrated below.

- (40) a. *Credo che non io che mangio mezzo chilo di ciliegie.
 I believe that NEG I.NOM that eat.PRES.IND.1SG half kilo of cherries.
- b. Credo che non sono io che mangio mezzo chilo di
 I believe that NEG be.PRES.IND.1SG I that eat.PRES.IND.1SG half kilo of
 ciliegie.
 cherries
 ‘I think that it is not I who eats half a kilo of cherries.’
- c. Credo che non sono io quella che mangia
 I believe that NEG be.PRES.IND.1SG I DEM.F.3SG that eat.PRES.IND.1SG
 mezzo chilo di ciliegie
 half kilo of cherries
 ‘I think that it’s not me who eats half a kilo of cherries.’

4.2. A formal analysis of ‘non io che’ structures

In this section, we build on and expand the analysis of *non io che* structures proposed in Rossi et al. (2025). Their account highlights two core mechanisms underlying the syntax of these constructions, which capture the expletive reading of the negative marker, the distinctive ironic flavor, their interpretation as conveying new information, and their strictly root behavior. These same ingredients have been independently argued by Greco (2019) to be responsible for the interpretive properties of Snegs in Italian, of which we provide an example below.

- (41) E non mi è scesa dal treno Maria?!
- And NEG to me.CL be.PRES.IND.3SG got off of the train Mary
- ‘Mary got off the train!’

(Example from Greco 2019)

In detail, the two core mechanisms are: (i) the merging of the negative marker in the CP area of the clause; (ii) the focalization of the whole chunk of structure⁷ which follows the negative marker. Therefore, the structural make-up of a *non io che* structure, according to Rossi et al. (2025), is in its essence the same as their English counterpart and Snegs. It may be summarized as follows:

- (42) Structure of a *non io che* sentence in Italian:
 [CP ... [X *non*] ... [FocP *io che* ... Foc [... ~~*io che*~~]]]

Let us start from EN and the proposal that it is directly merged in CP, in particular right above the Focus projection (Rizzi 1997; Rizzi & Bocci 2017).

It is typically argued that SN is merged in the TP area (Belletti 1990; Laka 1990; Zanuttini 1996, 1997, 2001), where it has the canonical function of an operator which may reverse the truth-conditions of the sentence, hence acting on its propositional content. If one assumes

⁷ The internal syntax of the *io che* chunk plausibly involves a relative clause (Bianchi 1999), but what matters for our purposes is that the whole sequence behaves as a unified constituent.

that EN, instead, is merged in the CP area, two significant advantages automatically follow. The first one regards the possibility of maintaining the same lexical entry for both SN and EN (Greco 2019). The difference only lays in their locus in the functional spine, but triggers important consequences: since EN is merged in the CP phase (Chomsky 2001), it is expected that it cannot license NPIs. That is because the previous v*P phase is already closed and impenetrable to successive operations; in other words, EN is not able to see inside the previous v*P phase, where NPIs would be located, and therefore cannot license them. The polarity of the sentence remains affirmative: the compatibility of *non io che* constructions with PPIs follows as well. A second key advantage of assuming that the EN is merged in the CP domain is that it allows the negation to avoid operating on the propositional content of the sentence. Instead, it can target the presuppositional layer—typically associated with Focus (Benincà 1996; Delfitto et al. 2019; Greco 2017). This view aligns with the traditional understanding of negation as a semantic operator which yields the complement set of its argument (Tovena 1996; Postal 2005). Here we also follow the Question-Under-Discussion (QUD) framework (Von Steutterheim & Klein 1989), whereby each utterance responds to an explicit or implicit question—often something like “What is happening?”, which is exactly the (propositional) question a *non io che* construction may be an answer of. This question activates a set of plausible events (the focus set), from which the actual *non io che* construction selects one. In a sentence like “*Non io che mangio mezzo chilo di ciliegie da sola*” (‘Not me eating half a kilo of cherries by myself’) the negative marker does not reverse the truth value, but signals that the event described (eating half a kilo of cherries alone) falls outside what is expected or typical, therefore generating the ironic/surprising effect. In this view, the negative marker operates on the Focus layer, excluding the proposition from the focus set and producing the ironic or surprised effect typical of these constructions (Delfitto et al. 2019). The utterance thus conveys: this is not what one would normally expect to happen, especially if it is established in the Common Ground (Stalnaker 2002) that eating that many cherries alone is excessive or unusual.

However, this leaves open the question of how to formally capture the speaker’s personal stance and epistemic attitude. Even when a *non io che* construction features a second- or third-person subject, the ironic or surprising interpretation is clearly anchored to the speaker: it is the speaker who evaluates the event as unexpected, ironic, or marked with respect to their own expectations or worldview. We highlight this issue, and while we do not claim to offer a definitive answer, we suggest that one possible path is the one taken by Tsiakmakis & Espinal (2022), who in turn draw on Krifka’s work on the layered structure of Speech Acts.

Tsiakmakis & Espinal (2022) propose a reinterpretation of expletive elements (going also beyond negation), suggesting that they contribute to the pragmatic enrichment of utterances rather than being semantically vacuous, in line also with Greco (2019) and Delfitto et al. (2019), Wood (2014), *inter alia*. To support this view, they examine a range of cases typically categorized as involving expletiveness, with particular attention to EN in Italian Snegs, as discussed by Greco (2020). Their analysis is framed within Krifka’s (2015, 2023) Speech Act Model.

According to this framework, the proposition *p* is generated within TP, and is subsequently embedded within a rich left-peripheral structure composed of at least three layers (43).

(43) JP: Judgement Phrase — where the speaker’s epistemic and evidential stance toward *p* is encoded.

COMP: Commitment Phrase — which signals the speaker’s public commitment to the truth of *p*.

ACTP: Act Phrase — which asserts *p* into the Common Ground (Stalnaker 2002).

Crucially, in their proposal, the negation *non* is not semantically void but is structurally merged as a modifier of the head J– in JP, which denotes the set of propositions included in the speaker’s epistemic universe. When *non* is adjoined to J–, it signals that the proposition *p* is not part of what the speaker expected to be true, thus conveying a sense of surprise or disbelief. This might be a key element in the derivation of the characteristic interpretive effect of Snegs: a speaker publicly committing to the unexpected truth of the proposition. In this way EN contributes compositionally to the illocutionary force of the utterance. Now, if we were to adopt this framework, a cartographic issue would remain unresolved concerning the position of the Judgement Phrase. It is necessary to establish the position of JP in the Left Periphery in order to determine whether it may occur above the Focus Phrase—a crucial element in Greco’s (2020) analysis of Snegs and in Rossi et al.’s (2025) analysis of *non io che* constructions. If the Judgement Phrase were to be located below Focus, Krifka’s framework could not be straightforwardly integrated into our analysis, in which EN is merged in the CP area and selects a Focus Phrase. In his work, Krifka simply notes that his tripartite structure of speech-act projections aligns with Rizzi’s (1997) Split CP framework. However, he does not clarify whether his structure is intended to replace the exploded CP à la Rizzi (1997), or rather to complement it—and if so, in what precise manner. Looking at Villalba (2024), however, we find both empirical evidence and an explicit proposal regarding this issue: in his analysis of mirative markers in Romance languages, he argues that Krifka’s projections occupy a position higher than ForceP, directly above it, thereby constituting an additional layer atop the CP field. On these grounds, if we follow Espinal’s proposal that the head of expletive negation is housed in J–, this would be compatible with Greco’s analysis in which EN selects a Focus phrase—since J– is structurally higher than FocusP. Having established these considerations, we now turn to examine the second core ingredient we have repeatedly alluded to: the focalization of an entire syntactic chunk, triggered by a requirement imposed by EN.

In *non io che* constructions, the entire structural sequence that follows the negative marker—namely, the nominative subject, the complementizer *che*, and the finite verb—is interpreted as a single syntactic unit and undergoes movement to the specifier of a FocP. This type of “chunk” focalization has been independently proposed for both Snegs and the English not-ACC-ing constructions, namely the English equivalent of *non io che* (Rossi et al. 2025). The fact that this sequence behaves as a unified constituent is crucial, as it accounts for the root-like distribution and the new-information interpretation of *non io che* sentences, as also observed for their English counterparts and Snegs. The informational status of *non io che* constructions can be empirically diagnosed by their ability to serve as answers to propositional questions—a canonical test for Focus (cf. Ovalle & Guerzoni 2004; Brunetti 2004). Following these accounts, we assume that in such contexts, new information resides within the focus domain of the sentence, while the non-focused portion is subject to ellipsis (Merchant 2001). This is illustrated by the contrast between extended and elliptical answers, as in (44B,B’):

- (44) A. Che cosa ha vinto Gianni?
 ‘What did Gianni win?’
 B. [Una maglietta]_{NEW} ha vinto Gianni. (Extended)
 ‘Gianni won a shirt.’

B'. [Una maglietta]_{NEW} (Elliptical)
 [_{FocP} [A shirt]_j Foc⁰ ... [TP Gianni won t_j]]

The behavior of not-ACC-ing constructions is parallel: their suitability as answers to propositional questions indicates that the entire negative chunk corresponds to the focus domain. Additionally, if the *io che* ‘I that’ segment realizes focus, we should expect corresponding prosodic effects. This is indeed borne out: *non io che* constructions exhibit a rising intonation at the onset, followed by a flatter contour—a prosodic pattern discussed in Section 2. On these grounds, we argue that focalization of this clausal chunk, licensed by EN, contributes to the special interpretive properties of *non io che* sentences. Specifically, following Greco (2019), if negation targets the focus projection rather than the propositional layer (TP), it may negate the presupposed relevance or salience of the focused content, rather than asserting the falsity of the proposition itself. This provides a compositional path to account for the interpretive effects of irony, surprise and markedness observed in these constructions.

5. Conclusions

The aim of this study has been threefold: (i) to document for the first time the Italian *essere tipo* construction; (ii) to investigate the *non io che* construction, another web-originated structure now attested in Italian and compare it with *essere tipo*; (iii) to compare both with their English counterparts, offering a partial but substantial snapshot of contemporary Italian netspeak. These constructions, originally rooted in English internet discourse, have been adopted into Italian with surprising productivity, particularly in colloquial and digital registers. Whether they will eventually stabilize as part of spoken Italian grammar or remain limited to the linguistic domain of social media is a question that only time will answer. In support of our descriptive and comparative findings, we conducted a data scraping study to examine the actual productivity of both constructions. Our results highlight their syntactic flexibility and the wide variety of subjects they admit, ranging across all grammatical persons and noun types. This strongly suggests that these are not fossilized idioms, but fully productive syntactic tools that speakers can manipulate in accordance with their grammatical space and communicative intentions. In addition to this descriptive and comparative effort, we have proposed a formal syntactic analysis of both *essere tipo* and *non io che* constructions. Our goal is to establish a foundation for future research on the grammaticalization of web-born constructions across languages, and to contribute to the growing body of work that treats the internet not as a marginal linguistic phenomenon, but as a robust site of contact-induced grammatical innovation. This study highlights the importance of examining language contact phenomena and so-called “minor” constructions—those that are perceived by speakers as colloquial, marginal, or substandard. However informal they may seem, these structures are nonetheless full-fledged expressions of our language faculty. To disregard them in favor of more established or popular phenomena within generative grammar and linguistic theory risks overlooking essential components of what human language is and can be.

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We are grateful to the audience of ConSOLE33 and to our colleagues at IUSS Pavia for their insightful feedback, suggestions, and valuable empirical judgments regarding these constructions.

Abbreviations

3SG	third person singular	NEG	negation
ACC	accusative	AAVE	African American Vernacular English
INF	infinitive	LF	logical form
NOM	nominative	T	tense
PST	past	GER	gerund
1PL	first person plural	NOM	nominative
3SG	third person singular	IND	indicative
ACC	accusative	Q	question
FOC	focus	REFL	reflexive
PRES	present	COND	conditional
1SG	first person singular	IMPERF	imperfective
NP	noun phrase	HTML	HyperText Markup Language
DP	determiner phrase	CP	complementizer phrase
VP	verb phrase	FOCUSP	focus phrase
EPP	extended projection principle	TOPP	Topic phrase
SC	small clause	PRO _{ARB}	arbitrary pronoun
CL	clitic	M	masculine
DAT	dative	X POST	X post identification number
EN	expletive negation	PPI	positive polarity item
SN	standard negation	NPI	negative polarity item
SNEGS	surprise negation sentences	FORCEP	force phrase
JP	judgement phrase	COMP	commitment phrase
ACTP	act phrase	V*P	transitive v*P phase

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Allomorphy of sentential negation in Ishkashimi

Aleksandr Sergienko

This paper analyzes sentential negation in Ishkashimi (Eastern Iranian), arguing that a functional head Neg occupies a position in between Aspect (Asp) and T, but below Perfect (Prf) ($T > \text{Prf} > \text{Neg} > \text{Asp}$). Evidence for this position comes from tense-conditioned negative allomorphy in Ishkashimi, where *na-* serves as the standard negator and *nəst-* appears in the past tense. The analysis of the allomorphy is couched in Nanosyntax (Starke 2009).

1. Introduction

The position of negation in the functional sequence has long been an important topic in linguistics (Ouhalla 1991). The most prominent approach is to probe the scope and position of negation via adverbs (Zanuttini 1996) or the linear position of the negative marker. In this paper, however, I employ another diagnostic: looking at allomorphy of negative markers (De Clercq 2020).

Assuming that allomorphy is triggered by local features (Bobaljik 2012), investigating which features can trigger the allomorphy of negation sheds light on the position of negation in the functional sequence. For example, in Bambara, the voice-conditioned perfective allomorph *ma* (De Clercq 2025, 2024a) indicates that negation is low in the structure, specifically within a decomposed vP.

In this paper a similar phenomenon is investigated: an allomorphy of sentential negation in Ishkashimi. In this Iranian language there are two allomorphs of negation: the past tense negator *nəst* and an elsewhere exponent *na*.

Another related puzzle investigated in this paper is an apparent violation of the Mirror Principle. The present perfect form, (1-a), contains the past form, (1-b).

- (1) a. *wen-d-ûk* ('has seen')
- b. *wen-d* ('saw').

Assuming that perfect is an aspect (Zagona 2007), this suggests an order of $\text{Asp} > T$, which contradicts most research on aspect and tense (Cinque 2013).

The analysis is couched in Nanosyntax (De Clercq et al. 2025), adopting phrasal lexicalization, the superset effect, and a lexicalization algorithm (Starke 2018). As explained below, the core components of Nanosyntax are crucial for capturing negative allomorphy, resolving the apparent Mirror Principle violation, and diagnosing the position of sentential negation.

The structure of the paper is as follows:

- In Section 2 the Ishkashimi tense system is introduced, with examples of affirmative and negative sentences in each of the tenses. The past tense negative allomorph *nəst* is contrasted with the elsewhere negative allomorph *na-*.
- In Section 3 I introduce Nanosyntax, namely, phrasal lexicalisation, the superset effect and a lexicalization algorithm.
- In Section 4 the derivations for affirmative past and perfect are presented along with the lexical trees for the key exponents. In particular, the aforementioned Mirror Principle violation with *d-ūk* is explored.
- In Section 5 I present the lexical items for *na-* and *nəst*, introducing the concept of complex left branches. Then I show the derivations for negative past and perfect. In the past tense *nəst* is shown to lexicalize Neg, T and Pst.
- In Section 6 additional data locating Neg below Pst is presented. In the pluperfect the negative marker *na-* is prefixed to the lexical verb, providing additional support for a position for negation below TP.
- In Section 7 I summarize my results.

2. *Ishkashimi data*

This paper focuses on negative marking in the past tense of Ishkashimi.

Ishkashimi is an Eastern Iranian language belonging to the Pamiri subgroup. It is spoken in Gorno-Badakhshan region of Tajikistan and in Badakhshan province in Afghanistan. The number of speakers in Tajikistan is estimated at 1000 (Nazarova & Nazarov 2011).

The data sources for Ishkashimi include my fieldwork in Tajikistan (June 2024), Pakhalina (1959), and Nazarova (1998).

2.1. *Tense system in Ishkashimi*

Ishkashimi has three synthetic tense forms: non-past, past, and perfect. Their use is illustrated in (2), (3) and (4).

- (2) A non, štok šid-u!
 hey Mom girl cry.NPST-3SG
 ‘Hey, Mom, a girl is crying!’ (Pakhalina 1959: 52)
- (3) Azi xi non-bo=m yaž-d za...
 I.NOM REFL mother-DAT=1SG say-PST that
 ‘I told my mother that...’ (Pakhalina 1959: 53)

- (4) Ak-dũnd gušt Payruza astu-duk
 EMPH-much meat P. send-PRF
 ‘Payruza has sent so much meat’ (Pakhalina 1959: 55)

The non-past tense, (2), is zero-marked, the past tense, (3), is marked with *-d* and the perfect tense is marked with *-dũk*, (4).

In addition to these tenses, there is also a periphrastic form: the pluperfect. It consists of a perfect form and of the past tense of the verb ‘to be’ *vəd*, (5):

- (5) Nawũk ref vũst-ũk vəd=əm sot=əs wan na-avir-əm za kənjo=m
 new broom bind-PRF be=1SG now=1SG that.ACC NEG-search-1SG that where=1SG
 wan wet-ũk=əm
 that.ACC put-PRF=1SG
 ‘I had bound a broom, now I cannot find where I put it’ (Pakhalina 1959: 55)

A brief description of these tenses’ contexts is provided in Pakhalina (1959). I will summarize them below:

- The non-past tense is used in present habitual, present progressive and future contexts.
- The past tense is used for referring to past events witnessed by the speaker.
- The perfect tense is used to refer to a result of a past action, to past events that are not witnessed by the speaker.¹ In addition, it is used in mirative contexts.
- The pluperfect tense refers to a past action that precedes another past action.

2.2. Ishkashimi tense and negation

In Ishkashimi, sentential negation is expressed with a prefix. It has different forms depending on the tense:

- In the non-past, perfect, pluperfect and past purposive tenses the negative marker is *na-*
- In the past tense the negative marker is *nəst*

The next examples illustrate the use of these two negative markers. (6) and (7) show *na-* appearing in the non-past and in present tense, meanwhile (8) shows *nəst*.

- (6) Azi ... dəgar na-xar-əm.
 I.NOM ... more NEG-eat.NPST-1SG
 ‘I will not eat more’ (Pakhalina 1959: 52)
- (7) Sawz pə wan na-wet-ũk-o?
 greens on it NEG-put-PRF-Q
 ‘Have you not put the greens in it (the soup)?’ (Pakhalina 1959: 55)

¹ In Ishkashimi, the past tense (direct evidential) and perfect (indirect evidential) serve as evidentiality strategies (Aikhenvald 2004), where evidentiality is a secondary meaning derived from their primary tense/aspect semantics. The past tense’s direct evidential implicature arises via Grice’s Maxim of Quantity: choosing the specific past form over the perfect signals a witnessed event, while the perfect defaults to non-witnessed contexts.

- (8) Azi=m gugərd nəst=avûld
 I.NOM=1SG match NEG.PST=find.PST
 ‘I didn’t find the matches’ (Pakhalina 1959: 55)

These forms can be summarized in the following table featuring affirmative and negative forms of the verb *wenûk* (‘to see’):

	AFF	NEG
NPST	wen	na-wen
PST	wend	nəst-wend
PRF	wendûk	na-wendûk
PLPRF	wendûk vəd	na-wendûk vəd

Table 1. Tense forms in Ishkashimi: affirmative and negative

In the table, cyan highlights *na-*, used in the non-past, perfect, and pluperfect tenses, while red highlights *nəst*, used in the past tense. These data show that the unmarked form for sentential negation is *na-* (used in most contexts), meanwhile the marked form (used in the past tense only) is *nəst*. Following Miestamo (2005) and De Clercq (2024b), I term *na-* a ‘standard negator’ and *nəst* - ‘negative allomorph.’

Another context in which the morpheme *nəst* is used is in negative existential contexts, as in (9):

- (9) Azi=m qirqiz nəst.
 I.NOM=1SG K. NEG.EXST
 ‘I’m not a Kyrgyz.’ (Pakhalina 1959)

The analysis in Section 4 assumes that these two uses correspond to distinct lexical items in the Ishkashimi lexicon. Although here is a diachronic link between the negative marker *nəst* and a past tense negator *nəst*, it is outside the scope of this paper.

The remaining sections of the paper are dedicated to modeling the allomorphy depicted in Table 1 using the methods of Nanosyntax², and showing how in doing so the apparent Mirror Principle Violation gets resolved and the position for negation can be diagnosed.

3. Theoretical assumptions

This analysis is couched in Nanosyntax (Baunaz & Lander 2018), crucially adopting phrasal lexicalisation, the superset effect (see De Clercq et al. 2025 for discussion) and a lexicalization algorithm (Starke 2018).

Phrasal lexicalization (or phrasal spellout), a core concept in Nanosyntax, posits that lexicalization targets phrases rather than terminals, unlike Distributed Morphology (De Clercq et al. 2025). This implies that lexically stored elements are all phrasal elements, usually consisting

² An anonymous reviewer asks whether Nanosyntax is the only way to explain the syncretism pattern in Table 1 and whether a DM analysis is possible. The data presented in the table might be indeed explained in DM: there would be a contextual allomorphy rule, where Neg in the context of T[Pst] is spelled out as *nəst*. The elsewhere form would be *na-*. However, a DM analysis would not explain the data in the section 4.1, as explained in that section.

of one or multiple phrasal layers. This approach is ideal to capture portmanteaus,³ since these are - par excellence - phrasal elements, i.e. they consist of different features. For example, a suppletive form *worse* would be a portmanteau of Adj and Cmpr, lexicalizing them as a single constituent.

The superset effect (or superset principle, Starke 2009) describes how lexical items match the syntactic structure. Crucially, a lexical item can be a superset of the syntactic structure and still be a candidate for lexicalization. This follows from the condition on matching, (10).

- (10) A lexically stored tree matches a syntactic node iff the lexically stored tree contains the syntactic node.

If more than one lexical item is a candidate to lexicalize a particular structure, the more specific candidate would win over the less specific one, a condition referred to as the Elsewhere Condition (Kiparsky 1985).

The lexicalization algorithm is a series of steps performed after the merge of each feature (Starke 2018). In Nanosyntax, lexicalization occurs after the merge of each functional feature in a cyclic, stepwise manner.

Another aspect of Nanosyntax is its approach to features (De Clercq et al. 2025). In this framework each feature is a separate head. Thus, for example, instead of a single head T with the feature Pst the structure would consist of both T and Pst as terminals.

As lexicalization proceeds cyclically, step by step, allomorphy can only arise in a strictly local configuration. In other words, the trigger of the allomorphy must either be strictly adjacent to the trigger or form a constituent with it. As such, studying how to capture negative allomorphy will help to determine the relative position of tense/aspect features in Ishkashimi with respect to negation, or to put it differently, provides insight into the structure of the functional sequence.

Last but not least, this framework affects my choice of terminology. Throughout the paper I will use the following terms:

- ‘lexicalization’ as a process of matching lexical items with the syntactic structure (alternatively known as ‘spellout’)
- ‘lexical item’ or ‘lexical tree’ as an entry stored in the lexicon (similarly to ‘vocabulary item’)
- ‘matching’ as comparing the structure of lexical trees (exponents stored in the lexicon) to the syntactic trees. This occurs after every step of the algorithm and on success the next feature is merged.

4. Analysis: the affirmative forms

To analyze the negative forms in Table 1, I first examine the structure of affirmative non-past, past, and perfect sentences in Ishkashimi. That includes proposing lexical items and running the derivation.

³ This approach to portmanteaus is similar to spanning (Svenonius 2016) in Distributed Morphology.

4.1. Lexical items: affirmative non-past, past and perfect

In this subsection I will explore which features are lexicalized by each relevant lexical item in Ishkashimi from Table 1.

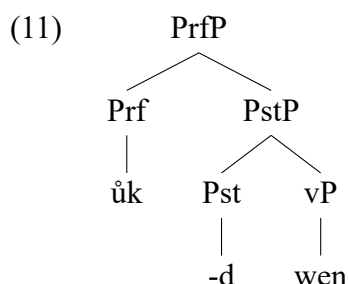
First, I will explore the forms for past and perfect tenses, their exponents and features.

Here is an abridged paradigm of verb *wenûk* ‘to see’, showing the past and the perfect forms:

wen	NPST
wen-d	PST
wen-d-ûk	PRF

Table 2. Paradigm of the verb *wenûk* (selected forms)

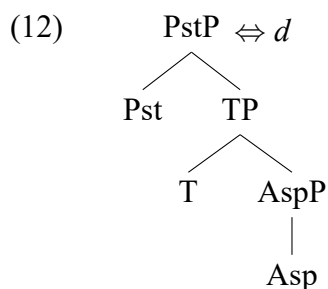
As the segmentation suggests, the perfect form contains the past form. This is true for most of the verbs in Ishkashimi. As the Mirror Principle (Baker 1985) suggests, the relative ordering of morphemes reflects the relative ordering of syntactic terminals. Based on these data, it is tempting to propose the following structure:



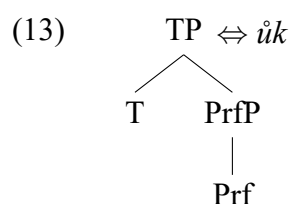
However, this structure places the perfect above the past tense in the functional sequence, which is unexpected, as perfect is typically considered an aspect (Zagona 2007). It has often been claimed that aspect is lower than tense in the functional sequence, see Cinque (2013).

Therefore, a different analysis is needed.

Phrasal lexicalization in Nanosyntax allows the exponent *-d* to lexicalize more than just the PST tense head. I propose that it lexicalizes PST, T⁴ and ASP, meanwhile the perfect exponent *ûk* lexicalizes T and PRF. In the past tense the syntactic structure would consist of ASP, T and PST, meanwhile the syntactic structure for the perfect tense is ASP, PRF and T. The lexical trees for each exponent would therefore be as follows:



⁴ The feature T is still needed here because I treat it as the default tense exponent used in the non-past tense. However, the structures for the non-past tense are not included in this paper.



Under this analysis *-d* is not just a ‘past tense exponent’, but it also lexicalizes some lower aspectual projections. The consequence is that *-d* can lexicalize all its features in the context of past tense, but in the perfect tense it only lexicalizes the ASP, its bottom feature. This is possible due to the condition on matching, (10), and its concomitant Superset effect,⁵ which boils down to the fact that a lexical item can be a superset of the corresponding syntactic structure. This ‘shrinking’ of *-d* can be represented in the following lexicalization table, where the rows indicate the contexts, the columns indicate the functional features and the colors identify which functional features are lexicalized by each lexical item:

Table 3. Lexicalization table for the past and perfect tenses

	vP	AspP	PrfP	TP	PstP
Past	wen	-d			
Perfect	wen	-d	-ûk		

A key question is the exact location of the bottom feature of *-d* in the structure. Akkuş (2020) examines past tenses in Iranian languages and associates a related exponent to ‘StemP, located lower than TAM projections in the structure.’ Ishkashimi causative verbs support this idea. The causative affix *-on* invariably precedes *-d*, for example *pečə-d* (‘to turn’, intransitive) and *peč-on-d* (‘to turn’, transitive). Following the Mirror Principle, I can assume that the feature for *-d* is above *v* (where the causative is located). That is, in an aspectual layer.

This paper focuses on the contrast between the past and present perfect tenses; derivations for the non-past tense are not included. That is because these two tenses share the exponent *-d* discussed in the previous section. As the past tense has *nəst* as a marker of sentential negation and in the perfect there is *na-*, it is a clear contrast which requires explanation.

4.2. Derivation: affirmative past

The crucial point in derivation in Nanosyntax is the lexicalization algorithm (repeated here):

1. Merge F and lexicalize.
2. If fail, try a spec-to-spec movement and lexicalize.
3. If fail, try a movement of the complement of the newly inserted feature and lexicalize.

⁵ The same logic cannot apply in DM which features a Subset Principle (Halle 1997). If *-d* is specified for both Asp and Pst, it cannot surface in just one of these environments. However, a possible DM analysis might feature a redundancy rule which inserts a parasitic feature P in the contexts of both past tense and present perfect, so then the exponent *-d* is triggered by this feature. Trommer (2016) had a similar idea uniting English past tense and present perfect.

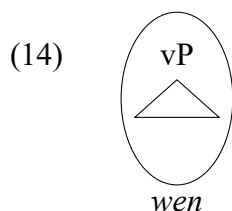
4. If fail, move a complex left branch (CLB) that can provide the feature.
5. If fail, go back to the previous cycle, and try the next option for that cycle.
6. If fail, try to spawn a new derivation providing feature X and merge that with the current derivation, projecting feature X to the top node.

For the sake of brevity I will only illustrate the most crucial steps of the derivation, though all the steps will be described.

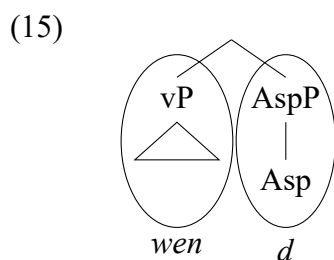
All derivations consist of the verb *wenŭk* ('to see'), the paradigm of which is given in table (1).

First, I will derive the affirmative past structure. Recall that it features vP, Asp, T and Pst. These features will be merged and each trigger their respective lexicalization cycles. The correct output would be *wen-d*.

The derivation starts with vP, which in itself consists of several verbal projections such as Aktionsart and Voice, but I will not go into the details of its featural content for expository ease. I assume for now that these projections are jointly lexicalized by the verbal stem *wen* 'to see':



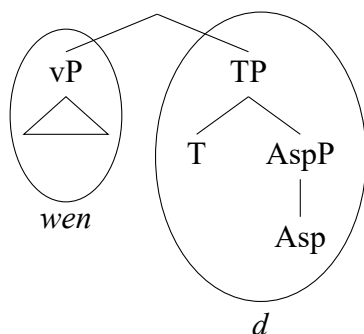
After that, Asp is merged (Step 1). The lexicalization is not possible, since there is no lexical item in the lexicon that can lexicalize this structure. Step 2 is triggered. There is no specifier in the node inserted at the previous cycle, so Step 3 is triggered instead. The whole vP is then moved to the specifier of the Asp, and the output of that evacuation-driven movement is in (15).



In this structure AspP can be lexicalized, because there is a lexical item, (12), which matches the syntax in (15) thanks to the superset effect. So *-d* can be inserted.

The next cycle starts with the merge of T. There is no match on the first step, so Step 2 is triggered. The specifier of the previous stage of derivation is vP and it is moved to the position of the specifier of the current derivation. The structure is in (16):

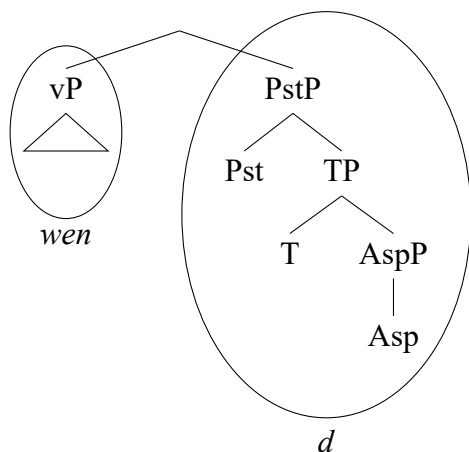
(16)



TP and AspP form a constituent together. Due to Superset effect, this constituent can be lexicalized by *-d*.

Next, the feature Pst is merged. It cannot be lexicalized in the first step of the cycle, so the second one is triggered and vP (the specifier of the previous stage) is moved to the position of the specifier. The result of the movement is as follows:

(17)



After vP has moved to the specifier position, the structure [Pst[T[Asp]]] is identical to the lexical tree for *-d*, so it is lexicalized.

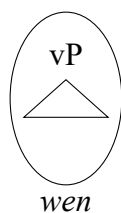
To summarize, in the affirmative past the exponent *-d* lexicalizes Asp, T and Pst – all three features which are featured in its lexical tree.

4.3. Derivation: affirmative perfect

Now I will derive the perfect tense. As explored earlier, the functional features present in the perfect tense are Asp, Prf and T. The correct output would be *wen-d-ûk*

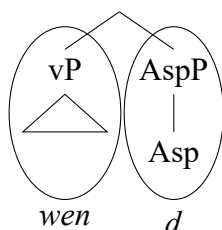
The existing structure is vP (the verbal stem).

(18)



Next, the feature *Asp* is merged. The derivation proceeds just like in the past tense. The first step gives no candidate for lexicalization, so the second step takes place. However, there is no specifier in the *vP*, so lexicalization is not possible and the third step occurs. The complement (*vP*) is moved to the specifier position and the resulting structure looks like this:

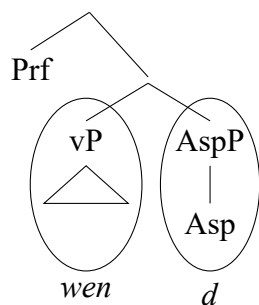
(19)



This structure is identical to the result of the first cycle of the past tense derivation. As in that case, the right branch (*AspP*) is a subconstituent of the lexical tree for *-d*, so matching occurs. The specifier is matched with the lexical item for *wen*.

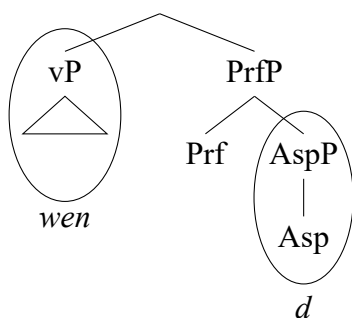
Next, the feature *Prf* is merged.

(20)



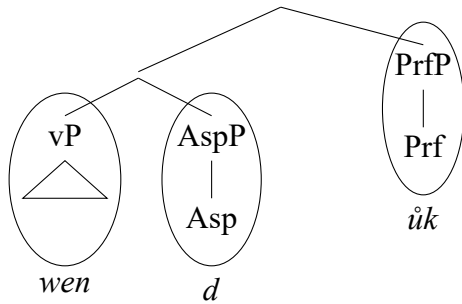
The first stage is unsuccessful, so the movement of the specifier is triggered. The resulting structure has *vP* in the specifier position and [*Prf*[*Asp*]] in the right branch, as in ((21)).

(21)



The constituent [*PrfP*[*AspP*]] has no matching candidates in the lexicon. *uk* is not a valid candidate, as it does not have a complement *AspP* in its tree. Thus, the specifier movement is undone, and the third step of the algorithm is triggered, where the complement of the derivation is moved to a specifier position. So, *vP* and *AspP* move together, and *PrfP* is now the only constituent on the right branch of the tree:

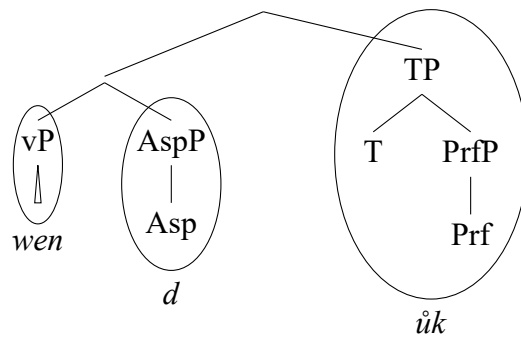
(22)



Thus PrfP is lexicalized by *ûk*, because the right branch of the syntactic tree in (21) is a subconstituent of the lexical item in (13).

The next cycle begins with merging T. The resulting structure cannot be lexicalized straight-away, and the specifier of the previous derivation (vP and Asp) is moved to the specifier position, resulting in the structure in (23). The right branch of this structure can be lexicalized by the lexical item for *-ûk*, (13).

(23)



In this section we showed how the containment of the past tense morphology inside the perfect tense can be understood as a consequence of the fact that the exponent *-d* is a phrasal constituent consisting of aspectual and tense related features. In the derivation of the perfect the exponent can lexicalize only the aspectual features, while for the derivation of the past tense the exponent's full structure is used. In the next section the derivations for the negative past and perfect will be presented.

5. Analysis: negative

5.1. Lexical items

As explored in the first section, negative markers in Ishkashimi are *na-* and *nəst-*. The first one is an elsewhere allomorph, meanwhile the second one only appears in the context of the past tense.

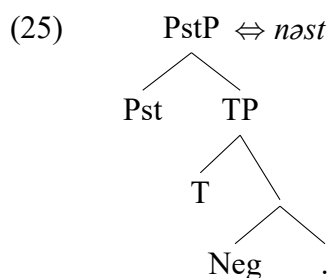
Both of these exponents are preverbal, which is crucial for their structure in Nanosyntax. Following Starke (2018), pre-elements are constituents with a binary foot, meanwhile post-elements are constituents with a unary foot. In other words, the structure of suffixes and postpositions is $[F_2[F_1]]$ and the structure of prefixes and prepositions is $[F_2 F_1]$.

This structural difference between lexical items has important consequences for when these lexical items can kick in, i.e. they have different roles to play with respect to the lexicalization

algorithm. Post-elements can lexicalise structures that are formed by steps 2 and 3 of the algorithm (Spec-to-Spec and Comp-to-Spec) and pre-elements can lexicalise structures that are formed by steps 4 and 6 of the algorithm, i.e. when complex left branches are moved or built. The algorithm is again repeated here with the steps relevant for complex left branches highlighted in bold:

1. Merge F and lexicalize.
2. If fail, try a spec-to-spec movement and lexicalize.
3. If fail, try a movement of the complement of the newly inserted feature and lexicalize.
4. **If fail, move a complex left branch (CLB) that can provide the feature.**
5. If fail, go back to the previous cycle, and try the next option for that cycle.
6. **If fail, try to spawn a new derivation providing feature X and merge that with the current derivation, projecting feature X to the top node.**

Turning back to Ishkashimi negative prefixes, their lexical trees both feature a binary foot. As per the latest developments in the theory,⁶ binary feet of these lexical items consist of an empty feature and then the first feature that projects. For *na-* the lexical tree would just consist of a feature Neg and an empty feature, (24). For *nəst* the tree would be more complex as it is specified for the past tense. We propose that the lexical tree consists of Pst, T, Neg and an empty feature, (25).



So, how exactly is the negative past allomorph *nəst* triggered? In my proposal this follows from the fact that Neg is an intervening head in the lexical structure of the past tense exponent -d, i.e. Neg intervenes between Asp and T.⁷

Thus, the ordering of negation with respect to other functional features is as follows:

- (26) Pst > T > Prf > Neg > Asp > v

⁶ The source for this claim is the Nanoseminar of Fall 2024 by Michal Starke.

⁷ This idea mirrors analyses of negative imperatives (Rivero & Terzi 1995), where the ban of imperatives combining with negation is explained by NEG blocking the movement of a lexical verb from V to T. In this analysis I do not treat NEG as blocking movement but rather blocking lexicalization. An approach similar to mine is found in (De Clercq 2024b).

In the past affirmative structures the exponent *-d* can lexicalize Asp, T and PstP, as they are adjacent in the structure. On the other hand, in the past negative structures *-d* cannot lexicalize this sequence, as there is an intervening head Neg. Instead, a complex left branch is formed and T and Pst will be merged with this new workspace. As this point, we have shown how suppletive allomorphy can point to the position for negation.

In the perfect and in the non-past this problem does not arise. The exponent for the perfect tense *ûk* is not ‘torn apart’ by negation. Instead, its features Prf and T are located higher than Neg. So, the derivation proceeds as usual. In the non-past tense T is lexicalized by ϕ -affixes and lower projections are lexicalized by the verbal root, so negation again does not act as a intervener.

This pattern can be illustrated by a lexicalization table below:

Table 4. Lexicalization table for the negative forms of past and perfect tenses

vP	AspP	NegP	PrfP	TP	PstP
wen	d	na	ûk		
wen	d	nəst			

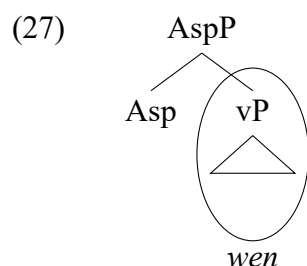
5.2. Derivation: negative perfect

In this section I will derive the negative perfect structure. Recall that it features vP, Asp, Neg, Prf and T. These features will be merged and each trigger their respective lexicalization cycles.

The lexicalization algorithm is repeated here for clarity:

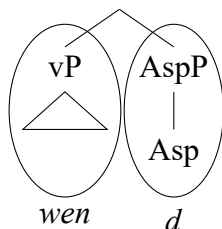
1. Merge F and lexicalize.
2. If fail, try a spec-to-spec movement and lexicalize.
3. If fail, try a movement of the complement of the newly inserted feature and lexicalize.
4. If fail, move a complex left branch (CLB) that can provide the feature.
5. If fail, go back to the previous cycle, and try the next option for that cycle.
6. If fail, try to spawn a new derivation providing feature X and merge that with the current derivation, projecting feature X to the top node.

At first, the derivation proceeds as in the affirmative perfect. Asp is merged and the first step of the algorithm is triggered, yielding Asp being to the left of the vP:



In this tree there is no match, as Asp is a single feature and not a phrasal constituent. So, the second step of the algorithm is triggered and the specifier of the previous derivation is moved to the specifier of the current one. However, the vP has no specifier, so this step is not applicable. Thus, the third step is triggered, and the whole complement (vP) is moved to the specifier position:

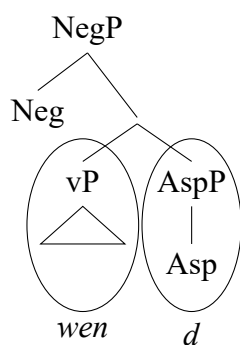
(28)



This structure matches the lexical trees for the verbal root and *-d*, (12).

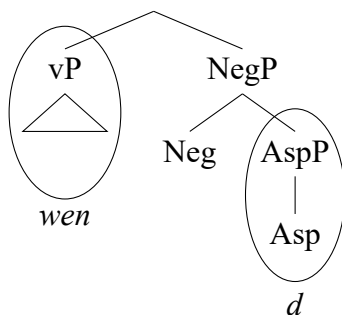
Next, the feature Neg is merged, in accordance with the order of features. Successive steps of the algorithm are then triggered: first, the feature is merged to the main derivation as in (29).

(29)



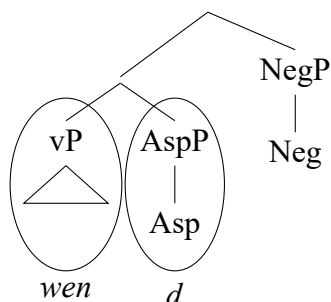
There is no exponent matching the structure in (29), so Spec-to-Spec movement is triggered. The resulting structure features vP in the specifier position and [NegP[AspP]] on the right branch:

(30)



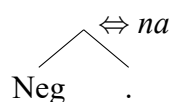
There is no match for this structure, because there is no lexical tree containing [Neg[Asp]] as a subconstituent. Specifier movement is undone, and the next type of evacuation-driven movement is tried. Comp-to-Spec is triggered and the whole vP and AspP are moved to the specifier position, NegP being on the right:

(31)



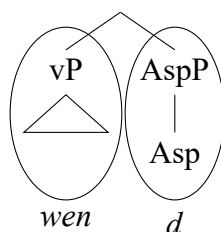
There is no candidate for lexicalising the isolated NegP on the right branch. The exponent for *na*- (repeated here for clarity) features a binary foot, i.e. it is a complex left branch that precedes the predicate it combines with, meanwhile the NegP in (31) has a unary foot. Consequently, *na* in (24) is not a match. In other words, the syntactic structure presented here features Neg as a suffix, meanwhile in the lexicon it is a prefix, so the lexical tree is incompatible with this derivation.

(32)



The option 4 of the algorithm is not applicable (there is no complex left branch in the structure). The next option of the algorithm is thus triggered and backtracking is applied. The derivation goes back to the previous cycle, when Asp is merged.

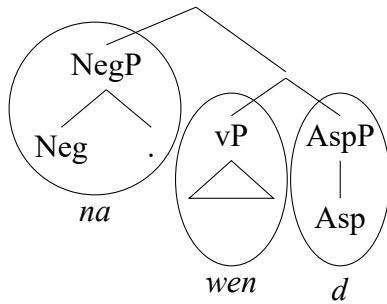
(33)



When backtracking applies, it tries the next option for the previous cycle. However, in the ‘Merge Asp’ all the steps were already exhausted (the derivation was successful after the third step of the algorithm). Therefore, backtracking goes to the previous cycle, to the vP. However, as I treat the vP as an inseparable unit, the derivation cannot proceed and move specifiers and complementizers in this structure. So, backtracking stops.

The next option in the algorithm in 5.2 is tried: merging a new workspace to provide the derivation with the feature Neg. Thus, a complex left branch is formed. It has a binary bottom containing Neg and an empty feature. The complex left branch is merged with the main derivation, which contains vP in the specifier and AspP in the right branch:

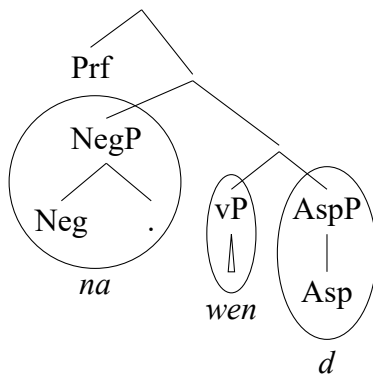
(34)



As illustrated in (34), in the complex left branch there is a tree containing a binary bottom with Neg and an empty feature. The lexical trees for *nəst* and *na* are both supersets of this derivation, i.e. they both contain the syntactic tree as a subconstituent but the lexical tree for *na* is a perfect match. So, the Elsewhere principle decides the competition and *na* lexicalizes NegP, and the derivation proceeds.

The next cycle begins when Prf is merged. The structure in (35) cannot be lexicalised.

(35)

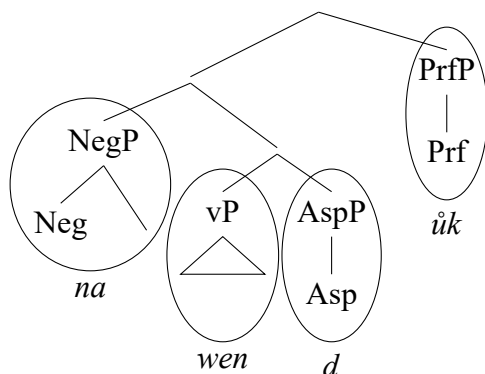


The next step in the algorithm is triggered: evacuation-driven movement. The specifier of the previous cycle should move to the specifier position. It seems that NegP is the specifier in question. However, projecting specifiers do not move.⁸

So, the third step is triggered instead: the complementizer is moved to the specifier position (NegP together with vP and AspP is moved), resulting in (36).

⁸ As claimed in (Wyngaerd et al. 2022:258), ‘In the current Nanosyntax literature, there is no consensus on whether projecting Specs can move or not.’ However, the most current line of thinking is that they do not move, and I adopt that line of thinking here.

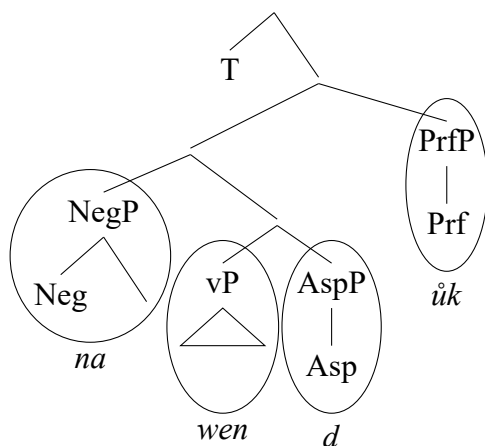
(36)



The lexical structure for *ik* in (13) is a superset of the rightmost branch of the tree (**PrfP**) in (36), so it lexicalizes the structure. Then the derivation proceeds.

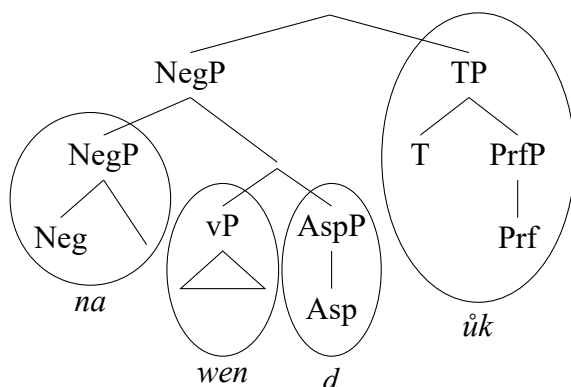
After that **T** is merged. In the first step it cannot be lexicalized because there is no lexical item that matches the entire structure in (37).

(37)



The second step follows: Spec-to-Spec. The specifier of the previous derivation is **NegP** together with **vP** and **AspP** – crucially, it does not project so it can be moved. It thus moves:

(38)



As the movement occurs, **TP** and **PrfP** form a constituent on the right branch of the tree. The lexical tree for *ik* is a perfect match for this constituent. At this step the derivation successfully ends.

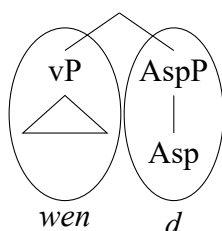
The key point of this derivation is as follows: the exponent *-d* only lexicalizes Asp, *-na* lexicalizes Neg and *-ûk* lexicalizes Prf and T. The feature Neg is only added when the complex left branch is formed.

5.3. Derivation: negative past

In this section I discuss the derivation for the negative past. The features here are as follows: v, Asp, Neg, T, Pst. The correct output should be *nəst wend*.

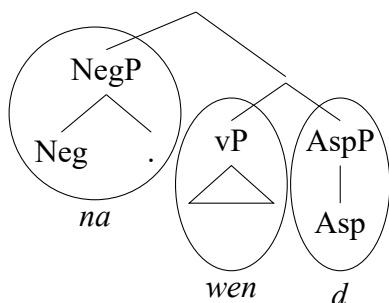
First, the derivation proceeds exactly like in affirmative past. So, after Asp is merged Comp-to-Spec is triggered and the result is successfully lexicalized:

(39)



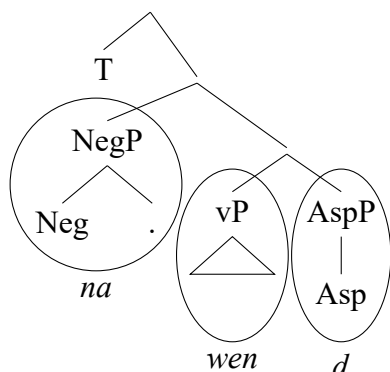
After that Neg is merged. The steps here are identical to ones described in the previous subsection (derivation of negative perfect). For this reason I will repeat them without illustrations. The first three steps are unsuccessful (Merge Neg, move Spec-to-Spec, move Comp-to-Spec, backtracking). The only option that is left is to form a complex left branch (a new derivation). This complex left branch consists of Neg and an empty feature and it is combined with the main derivation. There is a match in the lexicon: the complex left branch matches the exponent for *na-*.

(40)



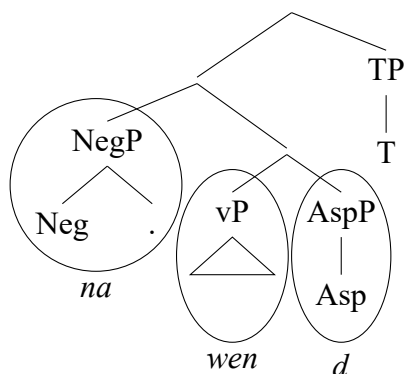
Next T is merged and lexicalisation is attempted. However, there is not matching lexical item for the structure in (41) in the lexicon.

(41)



The next step is Spec-to-Spec. It cannot proceed as the specifier of the previous cycle is NegP (in the complex left branch) and it projects. The third step occurs and the whole complement (NegP together with vP and AspP) moves to the specifier position. The resulting structure looks as follows:

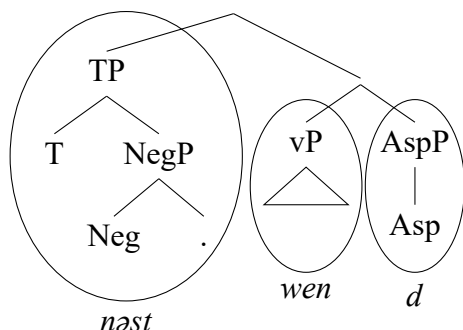
(42)



There is no lexical item in the lexicon which contains a lexical structure that features T at its bottom, i.e., the syntactic tree on the right branch of the structure in (42) is not a subconstituent of any of the lexical trees containing TP (neither *ûk*, *d* nor *nəst*).

So, as a next step in the algorithm, the complex left branch that can provide the feature is moved and T is merged there. The result would be as follows:

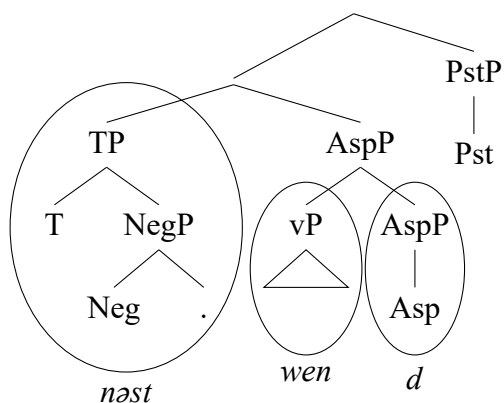
(43)



Now there is a lexical item that matches the complex left branch in (43): it is *nəst*, and *na* can no longer lexicalize this structure. Both NegP and TP are projected into the main spine and the derivation proceeds.

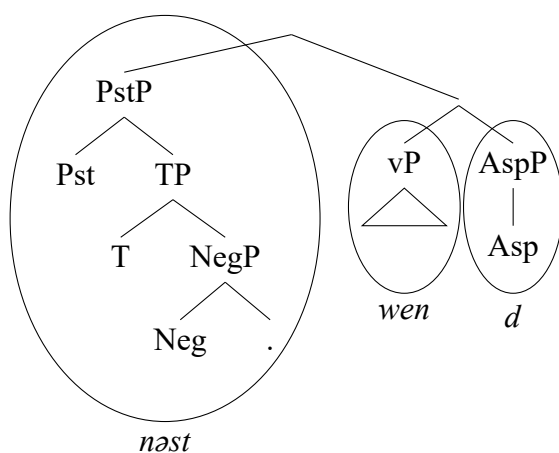
In the next cycle the feature Pst is merged. Similar to the previous cycle, first it is just added to the main derivation (and there is no matching lexical item). Next Spec-to-Spec is tried, but the specifier is not eligible for movement as it is a projecting complex left branch. So, Comp-to-Spec is tried:

(44)



There is no match in the lexicon for the PstP which stands on its own. So, Pst is merged in the complex left branch instead of the main derivation. The derivation is as follows:

(45)



Now there is an exponent in the lexicon which is a perfect match for the complex left branch: it is *nəst*. So the derivation ends in success. The output is correct: *nəst wend*.

The key point of this derivation is as follows: the exponent *-d* only lexicalizes Asp and *nəst* lexicalizes Neg, T and Pst. When Neg intervenes in the structure, past tense cannot be lexicalized by means of the lexical item for *-d*. Moreover, there are no lexical items in the lexicon that have T or Pst as a unary bottom feature in their lexical structure, hence these features will have to be lexicalised with the complex left branch that was created to lexicalise Neg. In other words, the negative allomorphy that we see in Ishkashimi follows from an intricate interplay between the position of negation in the functional sequence, the structure and size of lexical items in the lexicon of Ishkashimi and the algorithm that mediates between syntax and the lexicon.

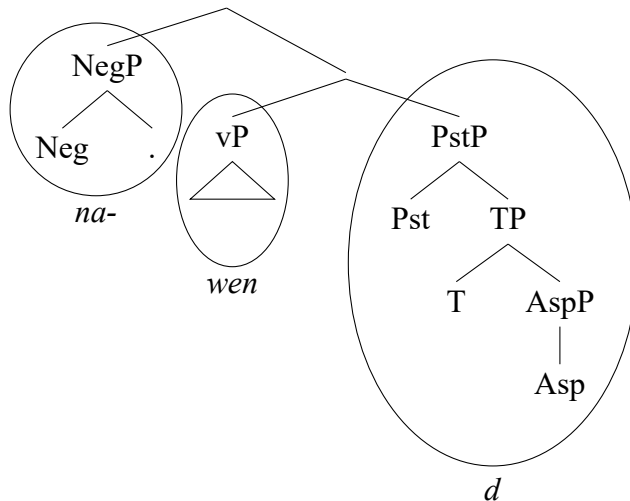
5.4. Position of negation

In this section I want to provide additional support for the position of negation as sitting between Asp and T. We diagnosed this position on the basis of the negative allomorphy in the past tense. If I had adopted the alternative analysis in which Neg is above TP, yielding the order in (46), then negation would not be an intervening head in the past tense, and the analysis, as laid out in section (46) would not be applicable:

- (46) Neg > Pst > T > Asp > v

More specifically, if the functional sequence in Ishkashimi were as in (46), *-d* would be able to lexicalize AspP, TP and PstP and *nəst* would never get triggered, since Pst has already been lexicalised. Instead of *nəst wend* this analysis would derive the non-existent *na wend*, as illustrated in (47).

- (47)



While this discussion accounts for why NegP cannot sit above PstP, I have not yet explained why the fseq cannot be as in (48-a), with negation between T and PrfP, but has to be as in (48-b).

- (48) a. Pst > T > Neg > Prf > Asp > v
b. Pst > T > Prf > Neg > Asp > v

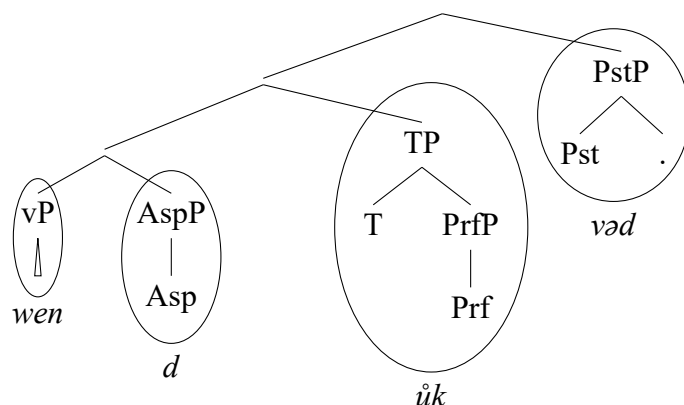
Support for this comes from the pluperfect, which consists of a perfect form and of the past tense of the verb ‘to be’ *vəd*. For example, the verb ‘to see’ would have the pluperfect form *wendük vəd* (‘had seen’). This tense form allows us to diagnose the position of negation in the presence of the perfect and past tense morphology.

Before I explain how the pluperfect provides an argument for the position of negation, I briefly discuss the role of *vəd* in the formation of the pluperfect. *vəd* is not a lexical verb or even an auxiliary but rather an alternative exponent for the past tense. The lexical tree for *vəd* has a binary bottom consisting just of Pst and an empty feature, as in (49):

- (49)
-

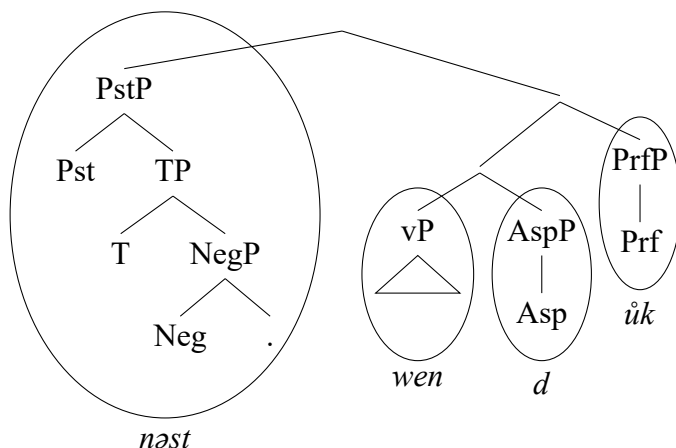
Thus, the pluperfect consists of all present perfect features (Asp, Prf, T) with Pst on top of them. When Pst is merged, all steps of the algorithm are tried until a complex left branch⁹ is merged. It features Pst and an empty feature on the right, so it is a perfect match for a lexical tree for *vəd*, (49).

(50)



I explore the predictions of this alternative hierarchy (with Neg between T and Prf) with regard to how negative pluperfect is formed. When Neg is added, the derivation proceeds as follows: AspP is lexicalized by *-d* (12), PrfP is lexicalized by *ūk*; then a complex left branch is formed containing Neg and an empty feature. It is matched with *na-* for now. Then T is merged, after unsuccessful options Step 4 is triggered and it is merged to the complex left branch and is now lexicalized by *nəst*. The next cycle is merging Pst, and again this feature surfaces in the existing complex left branch. It now consists of Pst, T and Neg with a binary bottom, and it is lexicalized by *nəst*. The full tree is given in (51):

(51)



The negation of the pluperfect, however, is *na-wendūk vəd*, and not *nəst-wendūk*. This incorrect prediction shows that Neg cannot be between Prf and T. As discussed earlier, Neg also cannot be above Pst. Thus, I am out of logical options and can conclude that the original hierarchy (Prf > Neg > Asp) is correct.

⁹ The linear position of *vəd* is to the right and not to the left of the lexical verb, which is the order one gets when merging the complex left branch. The right order is a consequence of a traditional feature driven movement, but for reasons of space I will not discuss this here.

6. Conclusion

In this paper I have investigated the allomorphy of sentential negation in Ishkashimi: more specifically, the past allomorph *nəst* as opposed to an elsewhere exponent *na-*. In doing so, I have adopted assumptions of Nanosyntax (phrasal lexicalization, superset principle, lexicalization algorithm).

First, I have examined an apparent Mirror Principle violation found in Ishkashimi. The past tense exponent *-d* is contained inside the present perfect tense exponent *-d-ũk* which points at a feature hierarchy $\text{PRF} > \text{PST}$. However, the literature on syntactic hierarchies shows that tense is uniformly above aspect in the functional sequence. To solve this inconsistency I propose that the lexical tree for *-d* contains not just PST but also ASP and default T. In the past tense *-d* lexicalizes all these projections, but in the perfect tense it just lexicalizes ASP. This is possible thanks to the identity condition on Matching in Nanosyntax, and the concomitant Superset Effect. The structure of the present perfect thus does not contain the feature PST despite having an apparent containment of a past morpheme.

Next, I have presented the derivations for the negative past and the perfect tense. We showed how the negative past allomorphy can be derived if NEG is an intervening head between the features ASP and PST. As these features are jointly lexicalized by one lexical item *-d* in the positive forms of the past, intervention by Neg no longer allows for their joint lexicalisation and the negative portmanteau *nəst* can kick in, which allows the joint lexicalisation of Neg, T and PST.

Finally, I discussed why assuming that Neg sits higher than Pst in the functional sequence or between Prf and T would lead to the derivation of ungrammatical structures. Support for this came from the pluperfect data.

Overall, we can conclude that this paper provided support to the idea that allomorphy arises in a very local configuration with its trigger, and that Nanosyntax is ideally equipped to capture this type of configurations. Moreover, in line with De Clercq (2024b), I have shown that negative allomorphy can be used to diagnose the position of negation in the functional sequence.

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Multiple *wh*-fronting feeds multiple sluicing

The case of Basque

Irene Macazaga

This paper analyses multiple sluicing in Basque. I first describe three strategies for multiple *wh*-questions available in this language: multiple *wh*-fronting, the mixed strategy and single *wh*-fronting. By showing the effects of the Superiority Condition and the Clausemate Condition exhibited throughout those strategies, I argue that the only plausible question-forming mechanism to feed multiple sluicing in Basque is multiple *wh*-fronting. Deletion of syntactic structure, therefore, narrows down the number of strategies that can be otherwise employed for multiple *wh*-questions in Basque. This has significant theoretical implications: ellipsis is more constrained than overt syntax when it comes to certain phenomena.

1. Introduction

Multiple sluicing (henceforth MS) is the elliptical phenomenon whereby more than one *wh*-phrase can be interpreted as a full sentential clause. The case of Basque MS is exemplified as follows.

- (1) *Context*: A way-too-ambitious town councillor has lost popularity and confidence from neighbours over the years. The politician is not aware of what is going on in their own town anymore.

Nork egiten zuen zer jakiten zuen lehen. Batzuetan agindu
who.ERG do.IPFV AUX what.ABS know.IPFV AUX before sometimes command
ere bai, nork nori zer.
even who.ERG who.DAT what.ABS

‘In the past she used to know who did what. Sometimes she even pulled the strings: who (did) what to whom.’

(Malagon 2021:90)

The three *wh*-phrases in (1) constitute the only pronounced material of the second embedded clause. Even so, they convey the same information that would otherwise be expressed with an entire embedded clause.

Sluicing and fragment answers are part of a larger elliptical phenomenon: clausal ellipsis. As defined above, *wh*-fragments and non-*wh*-fragments that appear on their own encode the meaning of the entire clausal projection. Clausal ellipsis is one of the most studied elliptical phenomena within the generative framework, mainly due to the fact that it has been widely attested cross-linguistically: e.g. Mandarin Chinese (Adams & Tomioka 2012), Dutch (van Craenenbroeck 2010), English (Ross 1969; Merchant 2001, 2004; Griffiths 2019), German (Ott & Struckmeier 2018; Blümel 2024), Japanese (Takahashi 1994), Turkish (İnce 2012).¹ Yet, MS remains largely unexplored in Basque.²

By surveying MS in Basque, we will look closely at two operations pertaining to the current debates on ellipsis: deletion and movement. Let me begin with the former. Most generative work comprehends ellipsis as the lack of pronunciation of a syntactically whole element. It is fairly uncontroversial that ellipsis consists in deletion of syntactic structure; that is, there is vast empirical evidence supporting the idea of syntactic structure internal to the ellipse, both cross-linguistically (Merchant 2001; van Craenenbroeck 2012; Barros 2014; Ott & Struckmeier 2018) and in Basque (Macazaga 2024). I thus set aside non-structuralist approaches along the lines of Chung, Ladusaw & McCloskey (1995), Lobeck (1995) and Culicover & Jackendoff (2005).³

Nevertheless, the involvement of a movement operation in elliptical constructions is not a settled issue. Even if prevailing views in the literature follow the move-and-delete approach (henceforth MDA) (Ross 1969; Merchant 2001), recent works have called into question their proposal (a.o. Ott & Struckmeier 2016, 2018; Griffiths 2019; Blümel 2024). Specifically, the trigger for the criticism dwells in the MDA's main tenet: movement is a prerequisite for deletion. Let us consider what the theoretical discussion consists of with an example: take, for instance, regular fragment answers in English.

- (2) A: Who did Mary talk to yesterday?
B: JOHN.

(Ott & Struckmeier 2016:225)

It is a well-known fact that focus in English is not marked by syntactically displacing the focal element through a movement operation; its prominence is rather signalled prosodically through pitch accent and stress (a.o. Chomsky 1972; Jackendoff 1972; Selkirk 1995; Gussenhoven 1999; Schwarzschild 1999; Büring 2010). However, to explain the derivation of fragment answers, the MDA forces the focal element to *exceptionally* move under ellipsis. For a fragment answer like (2B), the MDA postulates movement of the focal element that is otherwise not available in English for their non-elliptical counterparts. The exceptional movement operation is shown in (3a), and deletion of syntactically defined material (i.e. TP) is represented in (3b).

¹ See van Craenenbroeck & Merchant (2013) for an overview on elliptical phenomena across languages.

² As far as I am aware, Jeong (2007:137) briefly mentions the fact that Basque has MS, and Cortés Rodríguez (2024) reiterates that observation.

³ I use 'non-structural' as an umbrella term for those accounts positing that there is no syntactic structure whatsoever in the ellipse (a.o. Culicover & Jackendoff 2005), as well as for those accounts defending that constituents are null proforms (a.o. Chung, Ladusaw & McCloskey 1995). Their take on the idea of deleting full-fledged syntactic structure is similar: there is not fully articulated syntax that needs to be deleted at some point in the derivation.

(3) *Move-and-delete approach*

- a. [JOHN [_{TP} she talked to *t* yesterday]].
- b. [JOHN [_{TP} ~~she talked to~~ *t* yesterday]].

(Ott & Struckmeier 2016:225)

An alternative explanation for the case in (2B) could be as follows: fragment answers do not move exceptionally under ellipsis. Instead, they employ the same focus-marking strategy as in overt syntax; that is, they stay in situ, bear the main stress, and work as the maximal point of the pitch contour. That theoretical move, of course, reduces the load on the syntactic side but places the burden on the phonological domain. Concretely, this is what the in-situ approach posits: in elliptical cases no additional operation takes place (4a) and deletion occurs ‘around’ pronounced material (4b) (Ott & Struckmeier 2016, 2018; Griffiths 2019; Blümel 2024).⁴

(4) *In-situ approach*

- a. She talked to JOHN _{yesterday}.
- b. ~~She talked to~~ JOHN _{yesterday}.

(Ott & Struckmeier 2016:225)

As we observe in this run-of-the-mill example, movement cannot be taken for granted when it comes to *every* elliptical construction. Still, a clarifying note is in order here: the in-situ approach argues against proposing movement as part of the default analysis, but it does not forbid that syntactic strategy altogether. Namely, if a given language displays that operation in regular syntax, movement could already be active for the elliptical cases. What this account discourages is movement as a precondition on deletion, mainly because, in some cases, it would require stipulating exceptional movement exclusively for ellipsis.

Coming back to the principal phenomenon of this paper, MS in Basque can contribute to the discussion on the role of movement in ellipsis. In regular pronounced syntax, Basque is a language that marks *wh*-questions and focus structures through movement (de Rijk 1969, 2008; Ortiz de Urbina 1989; Elordieta 2001; Etxepare & Ortiz de Urbina 2003; Irurtzun 2007, 2016). As a consequence, the MDA could successfully account for the simple cases such as single sluicing or single fragment answers: there is movement of the *wh*-phrase or the focus (independently attested in the language) followed by concomitant deletion.

However, as I will show, when it comes to multiple *wh*-questions, moving all the *wh*-phrases is not the only available strategy. MS in Basque, thus, provides the perfect testing ground for the concern here: is movement truly essential when deletion takes place, or on the contrary, can other structures that do not involve movement feed deletion? To put it differently, the main theoretical question that I set out to answer is whether the notion of movement is a prerequisite upon MS in Basque prior to deletion.

I will argue that MS in Basque is instantiated by multiple *wh*-fronting (henceforth MWF) and subsequent deletion. Namely, I claim that movement is obligatory for this elliptical construction. The specifics of the analysis are given in (5).⁵

⁴ This proposal should not be confused with extreme in-situ approaches such as the one put forth by Abe (2015).

⁵ As for the terminology, I refer to the *wh*-phrase surviving deletion as the *remnant*, and to the pre-deletion structure as the *ellipsis site*. The latter is represented with a strikethrough and given in the translations between parentheses throughout the paper. Also, unless otherwise specified, all the examples provided involve Basque.

- (5) Nork egiten zuen zer jakiten zuen lehen. Batzuetan agindu
 who.ERG do.IPFV AUX what.ABS know.IPFV AUX before sometimes command
 ere bai, nork_i nori_j zer_k [~~egiten~~ ~~zion~~ ~~t_i~~ ~~t_j~~ ~~t_k~~].
 even who.ERG who.DAT what.ABS do.IPFV AUX
 ‘She used to know who did what. Sometimes she even was pulling the strings: who
 (did) what to whom.’

(Malagon 2021:90)

In the representation in (5), the three *wh*-phrases multiply front outside the ellipse before deletion. By way of illustration, a potential pre-deletion structure for (5) is provided in (6).

- (6) Nork nori zer egiten zion?
 who.ERG who.DAT what.ABS do.IPFV AUX
 ‘Who did what to whom?’

The aims of the paper are twofold: I will show (i) that MS in Basque contains underlying structure therein, and (ii) that the strategy that feeds MS is MWF.

The paper is laid out as follows. The first part concerns the descriptive and theoretical analysis of the strategies for multiple *wh*-question formation in Basque, together with the properties they are characterised by (§2). Secondly, I will present two types of effects that support that MWF is the underlying mechanism employed in MS in Basque: superiority effects (§3) and clausemate effects (§4). Finally, I expand on the formal analysis that I put forth (§5) and I conclude (§6). The proposal here contributes directly to the current understanding of multiple *wh*-question patterns in Basque. More importantly, it draws theoretical implications for the overall theory of ellipsis.

2. Multiple *wh*-question strategies

Looking at the cross-linguistic picture, we can find different patterns in the formation of multiple *wh*-questions: some languages can front only one *wh*-phrase (e.g. English, Spanish) (7); some others are unable to front any *wh*-phrase, and thus, leave them in situ (e.g. Chinese, Japanese) (8); and others can front up to three *wh*-phrases (e.g. Bulgarian, Serbo-Croatian, Russian) (9).

- (7) ¿Quién leyó qué?
 who read what
 ‘Who read what?’

(Spanish; Cortés Rodríguez 2024:60)

- (8) Ni xiang-zhidao shei mai-le sheme?
 you wonder who bought what
 ‘Who do you wonder bought what?’

(Chinese; Huang 1982:382)

- (9) Kto čto kogda skazal?
 who what when said
 ‘Who said what when?’

(Russian; Wachowicz 1974:158)

Last, I use traces for ease of exposition, but I assume a copy-based theory of movement (a.o. Chomsky 1995; Nunes 2004; Corver & Nunes 2007).

As far as Basque is concerned, we can observe diverse strategies such as multiple fronting or a combination of fronting and stranding. We will come back to examine those mechanisms later, but let me first introduce the simple cases of *wh*-questions (and foci), where movement is required.

Basque is an SOV language that employs syntactic movement for simple *wh*-questions and focus constructions. In the former case, *wh*-phrases are placed immediately preceding the verbal complex (usually formed by a lexical verb and an auxiliary verb). This has been analysed as *wh*-movement: the *wh*-constituent moves to the left periphery and it is followed by movement of the verbal complex (de Rijk 1969, 2008; Ortiz de Urbina 1989; Elordieta 2001; Etxepare & Ortiz de Urbina 2003; Irurtzun 2007, 2016), as in (10b). The question becomes unacceptable if the *wh*-phrase and the verbal complex do not maintain adjacency, as in (10c).

- (10) a. Anek janaria ekarri du.
 Ane.ERG food.ABS bring AUX
 ‘Ane brought the food.’
 b. Nork_i [ekarri du]_j t_i janaria t_j?
 who.ERG bring AUX food.ABS
 ‘Who brought the food?’
 c. *Nork_i t_i janaria [ekarri du]?
 who.ERG food.ABS bring AUX
 Int. ‘Who brought the food?’

(Adapted from Macazaga 2024:347)

In the same vein, the focal phrase is located before the verbal complex. The analysis for this observation is the aforementioned one: the element that is focalised displaces to the left periphery and the verbal complex also moves to obtain adjacency (11b). If the second step is not accomplished, the result is unacceptable (11c).

- (11) a. Anek janaria ekarri du.
 Ane.ERG food.ABS bring AUX
 ‘Ane brought the food.’
 b. ANEK_i [ekarri du]_j t_i janaria t_j.
 Ane.ERG bring AUX food.ABS
 ‘ANE brought the food.’
 c. *ANEK_i t_i janaria [ekarri du].
 Ane.ERG food.ABS bring AUX
 Int. ‘ANE brought the food.’

(Adapted from Macazaga 2024:347)

In short, movement is obligatory for simple *wh*-questions and foci in Basque. Returning to multiple *wh*-questions, syntactic displacement of *wh*-phrases is an option. However, there are more strategies available. In total, there are three multiple *wh*-question patterns in Basque: multiple *wh*-fronting (MWF), the mixed strategy, and single *wh*-fronting (henceforth SWF). First, witness the case in (12), where every *wh*-phrase fronts.⁶

⁶ From here onwards, I only represent the landing site of verbal-complex movement for ease of exposition.

(12) *Multiple wh-fronting*

- a. Nork nori zer esan zion atzo?
 who.ERG who.DAT what.ABS say AUX yesterday
 'Who said what to whom yesterday?'
- b. *Nork zer nori esan zion atzo?
 who.ERG what.ABS who.DAT say AUX yesterday
 Int. 'Who said what to whom yesterday?'
- c. *Zer nork nori esan zion atzo?
 what.ABS who.ERG who.DAT say AUX yesterday
 Int. 'Who said what to whom yesterday?'

(Adapted from Ortiz de Urbina 1989:83)

As shown in (12), *wh*-phrases that front obligatorily follow a specific order which replicates the baseline arrangement of constituents in Basque: *ergative* - *dative* - *absolutive* (Ortiz de Urbina 1989:83; Etxepare & Ortiz de Urbina 2003:462; Jeong 2004:107; Jeong 2007:112).

Aside from that, the second option available in Basque consists of multiply fronting two *wh*-phrases and leaving the remaining one stranded in situ.⁷

(13) *Mixed strategy*

- a. Nork nori eman dio zer?
 who.ERG who.DAT give AUX what.ABS
 'Who gave what to whom?'
- b. Nork zer eman dio nori?
 who.ERG what.ABS give AUX who.DAT
 'Who gave what to whom?'
- c. Nori zer eman dio nork?
 who.DAT what.ABS give AUX who.ERG
 'Who gave what to whom?'
- d. *Nori nork eman dio zer?
 who.DAT who.ERG give AUX what.ABS
 Int. 'Who gave what to whom?'
- e. *Zer nork eman dio nori?
 what.ABS who.ERG give AUX who.DAT
 Int. 'Who gave what to whom?'
- f. *Zer nori eman dio nork?
 what.ABS who.DAT give AUX who.ERG
 Int. 'Who gave what to whom?'

(Adapted from Jeong 2004:106)

The same constraint on the order of fronted *wh*-phrases applies in the mixed strategy. That is, the two *wh*-phrases moved to the left periphery follow the neutral order of Basque (i.e. *ergative* - *dative* - *absolutive*). Examples such as (13d), (13e) and (13f) are, therefore, unacceptable. As for the last strategy, it fronts one mere *wh*-phrase, deserting the remaining two in situ.

⁷ Basque can of course form multiple *wh*-questions with two *wh*-phrases. In that case, we would only have two logical options: fronting two (i.e. MWF) or fronting one (i.e. SWF). The mixed strategy would not be available.

(14) *Single wh-fronting*

- a. Nork eman dio nori zer?
 who.ERG give AUX who.DAT what.ABS
 ‘Who gave what to whom?’
- b. Nork eman dio zer nori?
 who.ERG give AUX what.ABS who.DAT
 ‘Who gave what to whom?’
- c. Nori eman dio nork zer?
 who.DAT give AUX who.ERG what.ABS
 ‘Who gave what to whom?’
- d. Nori eman dio zer nork?
 who.DAT give AUX what.ABS who.ERG
 ‘Who gave what to whom?’
- e. Zer eman dio nork nori?
 what.ABS give AUX who.ERG who.DAT
 ‘Who gave what to whom?’
- f. Zer eman dio nori nork?
 what.ABS give AUX who.DAT who.ERG
 ‘Who gave what to whom?’

(Adapted from Jeong 2004:106)

In the third strategy, under SWF, only one *wh*-phrase moves and the remaining two stay in situ. The main observation is that, in terms of arrangement, *wh*-phrases coming after the verbal complex are somehow freer than the preverbal ones.⁸ Consequently, we can find postverbal *wh*-arrays that do not display the baseline order (i.e. *ergative* - *dative* - *absolute*), as shown above in (14b), (14d) and (14f).

The three mechanisms overviewed in this section constitute a general consensus in the Basque literature (Ortiz de Urbina 1989; Jeong 2004, 2007; Etxepare & Ortiz de Urbina 2003; Artiagoitia 2023). Nevertheless, before closing this section a note is in order: there are two works in the literature that report slightly different data, and hence, different models to frame those data. Specifically, I would like to briefly review these two works: Reglero (2004) and Etxepare (2018).

Let me first begin with Reglero (2004). She analyses Basque multiple *wh*-question with two *wh*-phrases. Her data generally go hand in hand with the data presented in this paper. Reglero (2004) claims that multiply fronted *wh*-phrases necessarily obey a specific ordering.

- (15) a. Nork zer erosi du?
 who.ERG what.ABS buy AUX
 ‘Who bought what?’
- b. *Zer nork erosi du?
 what.ABS who.ERG buy AUX
 Int. ‘Who bought what?’

(Reglero 2004:257)

⁸ Even if some interspeaker variation can be found.

More importantly, there is one discrepancy between the data she collects and the data I report here (my data are based on previous works on this topic, and as a native speaker, I concur with the acceptability judgements introduced in this section). Based on judgements from her informants, Reglero (2004:257) states that the same ordering as above is also respected with the SWF strategy. To put it another way, there exists a constraint on the *wh*-phrase that can front in SWF, as in (16b).⁹

- (16) a. Nork erosi du zer?
 who.ERG buy AUX what.ABS
 ‘Who bought what?’
 b. *Zer erosi du nork?
 what.ABS buy AUX who.ERG
 Int. ‘Who bought what?’

(Reglero 2004:257)

As a matter of fact, the second paper I aim to go through, Etxepare (2018), reports (16b) as acceptable. Furthermore, Etxepare (2018) raises an additional condition that might factor in the order of *wh*-phrases: animacy. He argues that animate *wh*-phrases do not need to abide by any ordering condition, as shown in (17a) as opposed to (17b).¹⁰

- (17) a. Nor nork ikusi du?
 who.ABS who.ERG see AUX
 ‘Who saw whom?’
 b. *Zer nork ikusi du?
 what.ABS who.ERG see AUX
 Int. ‘Who saw what?’

(Etxepare 2018)

The acceptability judgements reported in these two works are worth exploring. If the input strategy changes, the prediction would be having different acceptable outcomes in the elliptical cases; it would be insightful to see how these speakers judge the MS counterparts of the questions they accept. Unfortunately, I do not have access to those data and thus will not pursue this line further. I leave modelling this interspeaker variation open for future research.

In this section I have reviewed the literature on multiple *wh*-questions in Basque. Even if there are a couple of works that outline slightly different results, I presented three principal patterns: MWF, the mixed strategy, and SWF. The key takeaway is that preverbal *wh*-phrases need to appear in a certain order, whereas postverbal *wh*-phrase are not as rigid in that sense.

3. Superiority effects

I will now show the first type of effect that assimilates MWF to MS structures: superiority effects. These effects concern the ordering of *wh*-phrases. The original definition of superiority is given below in (18).

⁹ Reglero (2004:257) herself acknowledges that her facts contradict prior observations within the literature, and admits that her informants find (16b) “considerably less acceptable” than (16a). I accept both.

¹⁰ I find (17a) very marginal.

(18) *Superiority Condition* (Chomsky 1973:246)

No rule can involve X, Y in the structure ... X ... [... Z ... WYV ...] where the rule applies ambiguously to Z and Y, and Z is superior to Y.

The category A is superior to the category B if every major category dominating A dominates B as well but not conversely.

The Superiority Condition shapes the arrangement of syntactic elements based on which element is superior with respect to the other one(s). Superiority effects have gained much attention mostly because the Slavic family of languages has received substantial attention in the literature on multiple *wh*-questions (a.o. Rudin 1988; Bošković 1997, 1999; Richards 1997; Boeckx & Grohmann 2003; Michelioudakis & Sitaridou 2016). If we examine two languages belonging to the aforementioned family, both instances of *wh*-fronting illustrated below look alike, at least superficially: both languages front *wh*-phrases.

- (19) Koj kogo vižda?
 who whom sees
 ‘Who sees whom?’

(Bulgarian; Rudin 1988:449)

- (20) Ko koga vidi?
 who whom sees
 ‘Who sees whom?’

(Serbo-Croatian; Rudin 1988:449)

Nevertheless, it was Rudin (1988) who observed that, upon closer scrutiny, MWF languages pattern differently, and could therefore be classified into two kinds. The former category encompasses languages that obey superiority (e.g. Bulgarian), whereas languages belonging to the latter category have freely arranged *wh*-arguments (e.g. Serbo-Croatian).

- (21) a. Koj kogo e vidjal?
 who whom is seen
 ‘Who saw whom?’
 b.*Kogo koj e vidjal?
 whom who is seen
 ‘Who saw whom?’

(Bulgarian; Bošković 1999:163)

- (22) a. Ko je koga vidio?
 who is whom seen
 ‘Who saw whom?’
 b. Koga je ko vidio?
 whom is who sees
 ‘Who sees whom?’

(Serbo-Croatian; Bošković 1999:163)

In the (a) cases, the nominative *wh*-phrase comes first in the array of *wh*-phrases, as opposed to the (b) cases, where the accusative is the first one. As the examples exhibit, in Bulgarian

only the pattern that obeys the Superiority Condition is acceptable (21a), not the second pattern (21b). Conversely, in Serbo-Croatian both arrangements are welcome (22).¹¹

As I anticipated in the previous section, in Basque, *wh*-phrases moving to the left periphery follow a particular ordering: *ergative* - *dative* - *absolutive*, as the unacceptable results in (23b) and (23c) show. There is a fairly big consensus that the array of *wh*-phrases needs to parallel the baseline arrangement of arguments (Ortiz de Urbina 1989; Etxepare & Ortiz de Urbina 2003; Jeong 2004, 2007; Artiagoitia 2023). In other words, Basque shows the so-called superiority effects regarding the MWF pattern.

(23) *Multiple wh-fronting*

- a. Nork nori zer esan zion atzo?
 who.ERG who.DAT what.ABS say AUX yesterday
 ‘Who said what to whom yesterday?’
- b. *Nork zer nori esan zion atzo?
 who.ERG what.ABS who.DAT say AUX yesterday
 Int. ‘Who said what to whom yesterday?’
- c. *Zer nork nori esan zion atzo?
 what.ABS who.ERG who.DAT say AUX yesterday
 Int. ‘Who said what to whom yesterday?’

(Adapted from Ortiz de Urbina 1989:83)

However, as displayed in the previous section, most authors agree that any *wh*-phrase can front in the mixed strategy (see (13b) and (13c)) or in SWF (see (14c)-(14f)). Following those judgments (and my own), those mechanisms do not seem to obey the Superiority Condition.

If we turn to ellipsis and survey MS, we notice that cross-linguistically a considerable amount of languages exhibit MS-like elliptical structures. As explained above, some are in-situ languages; see, for instance, Japanese in (24). Less surprising is the case of MWF languages: languages that allow MWF exhibit the possibility of having instances of MS, as in (25) for Russian.¹²

- (24) a. John-ga [dareka-ga nanika-o katta to] itta.
 John-NOM someone-NOM something-ACC bought that said
 ‘John said that someone bought something.’
- b. Mary-wa [dare-ga nani-o ka] siritagatteiru.
 Mary-TOP who-NOM what-ACC Q wants to know
 Lit. ‘Mary wants to know who what.’

(Japanese; Takahashi 1994:284)

- (25) Každyj priglasil kogo-to na tanec, no ja ne znaju kto kogo.
 everyone invited someone to dance but I not know who whom
 ‘Everyone invited someone to dance but I don't know who whom.’

(Russian; Grebenyova 2009:223)

¹¹ The picture is more complex than what I describe, but this shows the point here. I refer the curious reader to traditional works such as Rudin (1988), Richards (1997) and Bošković (2002).

¹² Apart from the languages mentioned in the main text, other languages have been claimed to have MS (or at least a construction that resembles MS at the surface form): Bangla (Bhattacharya & Simpson 2012), Mandarin Chinese (Adams & Tomioka 2012), English (a.o. Merchant 2001, Lasnik 2014); Romanian (Hoyt & Teodorescu 2012), Spanish (a.o. Cortés Rodríguez 2024), and Turkish (İnce 2012), among many other languages.

When it comes to MS in Basque, *wh*-remnants of MS need to abide by the Superiority Condition, as illustrated below in (26).

- (26) Norbaitek norbaiti zerbait ekarri dio gaur, baina ez dakit
 someone.ERG someone.DAT something.ABS bring AUX today but not I.know
 a. nork nori zer.
 who.ERG who.DAT what.ABS
 b. *nork zer nori.
 who.ERG what.ABS who.DAT
 c. *zer nork nori.
 what.ABS who.ERG who.DAT
 ‘Someone brought something to someone today, but I don't know who (brought) what to whom.’

The *wh*-array in (26a) shows iterative superiority; that is, the three *wh*-phrases strictly obey the Superiority Condition. In the remaining cases, that condition is violated: in (26b) the absolutive *wh*-phrase precedes the dative *wh*-phrase; while in (26c) the absolutive *wh*-phrase comes before the ergative *wh*-phrase. Those arrays are unacceptable, putting on display that MS mirrors the pattern of the non-elliptical counterparts in (23). In other words, MS tracks the same ordering constraint as MWF. The only possible sluice for (26) is provided in (27).

- (27) Nork nori zer ekarri dio gaur?
 who.ERG who.DAT what.ABS bring AUX today
 ‘Who brought what to whom today?’

Recall that the mixed strategy and SWF are not as restricted as MWF. Say, for instance, we take these following orders: *ergative* - *absolutive* - *verbal complex* - *dative* (13b) or *absolutive* - *verbal complex* - *ergative* - *dative* (14e). Those are perfectly acceptable orderings as overt instances of multiple *wh*-questions. But how does the picture look like under elliptical contexts? If the mixed strategy (28a) or SWF (28b) were the input for MS, once the relevant material was deleted (e.g. via non-constituent deletion), we would obtain unwelcome results.

- (28) Norbaitek norbaiti zerbait ekarri dio gaur, baina ez dakit
 someone.ERG someone.DAT something.ABS bring AUX today but not I.know
 a.*nork zer ~~ekarri dio~~ nori.
 who.ERG what.ABS bring AUX.COMP who.DAT
 b. *zer ~~ekarri dio~~ nork nori.
 what.ABS bring AUX.COMP who.ERG who.DAT
 ‘Someone brought something to someone today, but I don't know who (brought) what to whom.’

Neither strategy can be the source for the sluice as they both make wrong predictions with respect to superiority in MS. As a consequence, we could preclude the mixed strategy and SWF from being potential input mechanisms for MS.

Yet, one could arguably dispute that there is a confound in (28): the lack of identity of *wh*-phrases with respect to their correlates in the antecedent. Put informally, the Identity Condition determines that sluices need to be identical to their antecedent clauses to be recoverable under ellipsis. Identity can be modelled in terms of, for example, syntactic isomorphism or semantic

identity. Here, nevertheless, I allude to identity in the broadest sense: I refer to the order of the elements in the antecedent clause compared to the arrangement of remnants. If we observe the antecedent in (28), the indefinite correlates are laid out as follows: *ergative* - *dative* - *absolute*. So, neither the remnant-array in (28a) (*ergative* - *absolute* - *dative*), nor the one in (28b) (*absolute* - *ergative* - *dative*) parallels the correlate-ordering in the antecedent. Clearly, identity is violated. What is at stake now is whether the Superiority Condition overrides the Identity Condition. In (29) I control for identity; that is, correlates and remnants are arranged following the same order: *absolute* - *ergative*. So, identity (in a broad sense) is obeyed here. Similarly, to avoid any ordering confound in the antecedent clause, I make all correlates postverbal, which seems to be a position where indefinites scramble more flexibly. Still, making remnants match their correlates in identity but disobey superiority yields an unacceptable result.

- (29) *GAUR ekarri dio Joni zerbait norbaitek, baina ez dakit
 today bring AUX Jon.DAT something.ABS someone.ERG but not I.know
 zer nork.
 what.ABS who.ERG

Int. 'Someone brought something to Jon today, but I don't know who what.'

In short, the Superiority Condition overrides the Identity Condition between the correlate and the remnant (i.e. Correlate-Remnant Harmony (Dayal & Schwarzschild 2010)). Aside from that, we have seen in this section that the mixed strategy and SWF cannot make reasonable pre-sluices for MS structures. The superiority facts concerning MS are reminiscent of the superiority facts exhibited by the MWF strategy, making it very likely that MWF feeds MS.

4. Clausemate effects

The second parallelism that assimilates MWF to MS concerns the originating position of *wh*-phrases. The Clausemate Condition refers to the syntactic constraint that *wh*-remnants of MS must be extracted from the same finite clause (a.o. Takahashi 1994; Nishigauchi 1998; Merchant 2001; Lasnik 2014; Abels & Dayal 2023). In most languages, *wh*-phrases in MWF must have their base-generated positions within the same clause, and similarly, *wh*-remnants of MS necessarily belong to the same clause.¹³ To put it differently, MWF and MS exhibit clausemate effects, and are thus subject to the Clausemate Condition.

- (30) *Clausemate Condition* (Abels & Dayal 2023:432)

All remnants in multiple sluicing must originate in the same (finite) clause.

To the best of my knowledge, the original observation dates back to Takahashi (1994). He observed that in Japanese remnants of MS could only undergo extraction from the same finite clause, as in (31).

¹³ Among the reported counterexamples to the Clausemate Condition, we can mention Romanian (Rudin 1988:452) and Indonesian (Sato 2016). For more on this, see Abels & Dayal (2023) and references therein.

- (31) *Dareka-ga [John-ga nanika-o katta to] itteita ga, Mary-wa
 someone-NOM John-NOM something-ACC bought that said but Mary-TOP
 [dare-ga nani-o ka] oboeteinai.
 who-NOM what-ACC Q not remembers
 ‘Someone said John bought something, but Mary doesn't remember who what.’
 (Japanese; Takahashi 1994:286)

In (31) the indefinite correlates in the antecedent belong to different clauses: the nominative one comes from the matrix clause, whereas the accusative correlate is sitting in the embedded clause. Assuming that remnants replicate their correlates' base-generated positions before movement, the *wh*-phrases above cannot make acceptable remnants of MS in Japanese.

As far as Basque is concerned, *wh*-phrases in MWF necessarily belong to the same clause when it comes to their base-generated positions. As can be observed in (32), the base-generated position of each *wh*-phrase corresponds to a different clause: the ergative *wh*-phrase undergoes movement from the matrix clause, and on the contrary, the absolutive *wh*-phrase is extracted from the embedded clause.

- (32) *Nork_i zer_j [esan du t_i [ekarri duela Ibonek t_j]]?
 who.ERG what.ABS say AUX bring AUX.COMP Ibon.ERG
 ‘Who said that Ibon brought what?’

In other words, multiple extraction from different clauses is forbidden in Basque, as noted in Etxepare & Ortiz de Urbina (2003:500). Nevertheless, when we move one *wh*-phrase from the matrix clause but leave a second one (which sits in a separate clause) in situ, we can notice an amelioration effect without incurring any violation of the Clausemate Condition.

- (33) ?Nork_i [esan du t_i [zer_j ekarri duela Ibonek t_j]]?
 who.ERG say AUX what.ABS bring AUX.COMP Ibon.ERG
 ‘Who said that Ibon brought what?’

In-situ *wh*-phrases do not seem to abide by the same clausemate requirement as fronted *wh*-phrases. More importantly, if we want to ascertain what strategy we employ in Basque MS, we must survey the relevant elliptical cases.

- (34) *Norbaitek esan du [Ibonek zerbait ekarri duela], baina ez
 someone.ERG say AUX Ibon.ERG something.ABS bring AUX.COMP but not
 dakit nork zer.
 I.know who.ERG what.ABS
 ‘Someone said that Ibon brought something, but I don't know who (said that Ibon brought) what.’

The sentence in (34) exemplifies that the Clausemate Condition also holds in MS (original observation comes from Cortés Rodríguez 2024:47). That is, we obtain equally unacceptable results if we multiply extract *wh*-phrases that will end up being *wh*-remnants from different clauses. As was the case with superiority effects, clausemate effects exhibited by MS in Basque are akin to the MWF pattern. Unlike the mixed strategy and SWF (33), MWF shows clausemate effects (32), which can be interpreted as MWF feeding MS.

In what follows, I will attempt to contribute to the current discussion on the nature of the Clausemate Condition. I consider that Basque is a language which provides us with a suitable

testing ground for that, since we can check whether the condition is active under ellipsis as well as in overt syntactic movement. First and foremost, as I anticipated above, in Basque, the Clausemate Condition constrains not only elliptical structures, but also non-elliptical ones. I would like to elaborate on this generalisation by first adding another instance of overt movement where we can perceive clausemate effects. First, witness (35), which consists of two non-finite embedded clauses that add to the general observation.

- (35) a. Nork agindu dizu [zer ekartzeko]?
 who.ERG command AUX what.ABS bring.NMLZ
 ‘Who commanded to bring what?’
 b. *Nork_i zer_j agindu dizu t_i [t_j ekartzeko]?
 who.ERG what.ABS command AUX bring.NMLZ
 Int. ‘Who commanded to bring what?’

In the question in (35a) each clause contains a *wh*-phrase therein. Crucially, (35a) shows that having two non-clausemate *wh*-phrases is acceptable in Basque if the second one remains stranded in situ. The counterpart in (35b) exhibits the significant contrast: *wh*-phrases belonging to different clauses become problematic whenever we try to extract both of them. In essence, the Clausemate Condition restricts the behaviour of *wh*-phrases in MWF and MS, namely, in regular *wh*-fronting and under ellipsis.

Building on work by Georgieva, Marušić, Mišmaš & Žaucer (2025) for Bosnian/Croatian/Montenegrin/Serbian (henceforth BCMS), I argue that the Clausemate Condition in Basque is operative for overt movement as well as for elliptical cases. Georgieva, Marušić, Mišmaš & Žaucer (2025) collect data from BCMS to demonstrate that this language cannot be considered a proper counterexample to the Clausemate Condition, as Lasnik (2014) claims. The BCMS facts are truly reminiscent of the facts in Basque. On the one hand, we observe the Clausemate Condition in MWF constructions (36).

- (36) *Kome_i je koga_j Ivan objašnjavao t_i da je Marija izljubila t_j?
 who.DAT AUX who.ACC Ivan explain.PTCP that AUX Marija kiss.PTCP
 Int. ‘To whom did Ivan explain whom Marija kissed?’
 (BCMS; Georgieva, Marušić, Mišmaš & Žaucer 2025)

On the other hand, the constraint also restricts MS (37), precisely as in Basque.

- (37) U svakoj kancelariki šef je nekome govorio da je Jovan
 in every office boss AUX somebody.DAT tell.PTCP that AUX Jovan
 prevario nekoga. *Pitam se kome koga.
 deceive.PTCP somebody.ACC ask self who.DAT who.ACC
 Int. ‘In every office the boss told someone that Jovan deceived someone. I’m wondering whom whom.’
 (BCMS; Georgieva, Marušić, Mišmaš & Žaucer 2025)

Taking into consideration the similarities displayed by BCMS and Basque, I follow Georgieva, Marušić, Mišmaš & Žaucer (2025) arguing that the Clausemate Condition imposes locality constraints on overt *wh*-movement, specifically, on MWF. By extension, and assuming that MWF feeds MS, those effects are exhibited in MS as well.

5. Analysis and discussion

I have introduced three multiple *wh*-question patterns that can be found in Basque. In addition, I have checked them against two conditions, namely, the Superiority Condition (Chomsky 1973) and the Clausemate Condition (Takahashi 1994), to determine whether all of them behave alike. Even so, the main goal of this paper has been to compare those strategies to the elliptical phenomenon of MS. The same tests were used for the case of ellipsis. The results are summarised in Table 1.¹⁴

	MWF	Mixed	SWF	MS
Superiority	✓	X	X	✓
Clausemate	✓	X	X	✓

Table 1. Superiority effects and clausemate effects across strategies

As shown in Table 1, the results indicate a match between MWF and MS, which can be easily explained if we adopt the idea that the former feeds the latter. On top of that, we have seen significant discrepancies between the mixed strategy and SWF, on the one hand, and MS, on the other hand. To account for the elliptical cases, therefore, we should exclude those patterns as the input for MS in Basque.

As for the theoretical explanation, we need to account for several empirical observations regarding multiple *wh*-questions presented throughout this paper:

- (O1) In MWF, *wh*-phrases show superiority effects.
- (O2) In SWF, *wh*-phrases do not show superiority effects.
- (O3) In multiple *wh*-questions, in-situ (postverbal) *wh*-phrases show freer order than fronted (preverbal) *wh*-phrases, which have a fixed order.
- (O4) In multiple *wh*-questions, *wh*-phrases can be pronounced either fronted (preverbally) or in situ (postverbally), but at least one needs to be fronted.

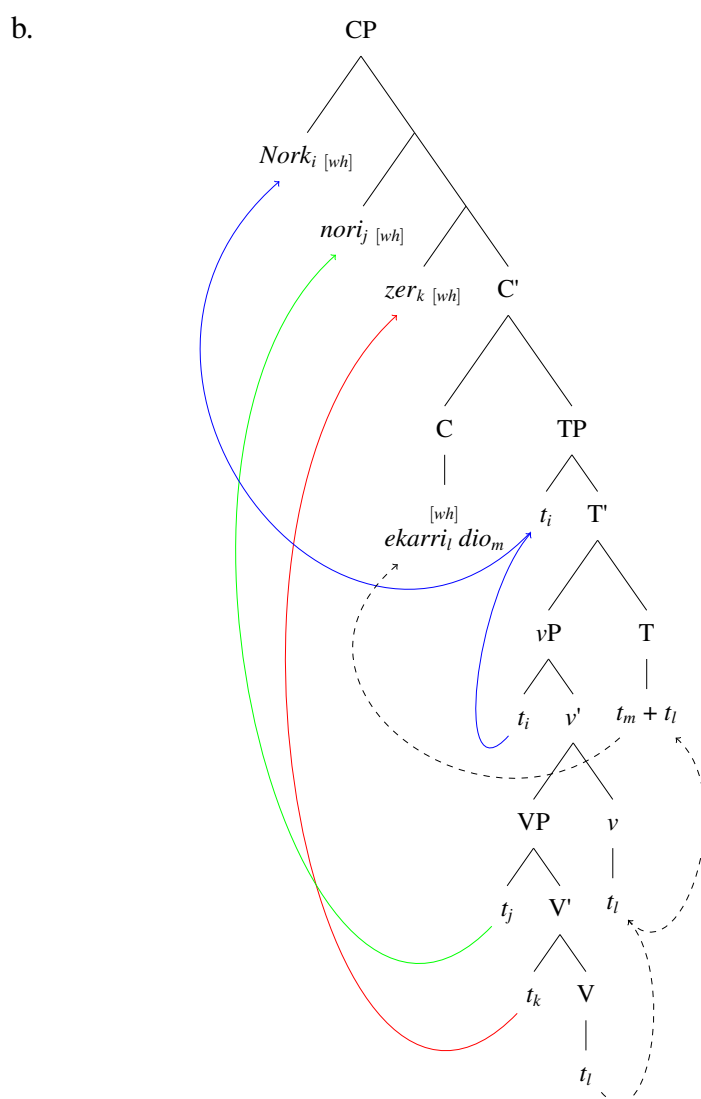
To properly offer an explanation for the superiority effects exhibited in MWF (O1), I put forth an analysis that combines two principles previously proposed in the literature: *Attract Closest* and *Shortest Move* (Richards 1997). In essence, by adopting the former principle, *Attract Closest*, which is target-oriented, the multiply-probing C head first attracts the closest *wh*-phrase; that is, the highest *wh*-phrase in the tree moves first. Furthermore, by assuming the latter principle, *Shortest Move*, which is mover-oriented, we ensure that the rest of the *wh*-phrases will move crossing as few nodes as possible. Specifically, their A'-movements will target inner specifiers of CP, generating a structure where we observe a “tucking in” of *wh*-phrases.¹⁵ As a consequence of integrating these two principles, we obtain an analysis that is able to account for the fact that *wh*-phrases in Spec,CPs follow a rigid order.

¹⁴ Even if a potential interspeaker variation could exist with respect to the arrangement of *wh*-phrases in the mixed strategy and SWF, Table 1 summarises the canonical observations in the literature (which correspond with my intuitions as a native speaker).

¹⁵ Two notes are in order here: (i) *Shortest Move* is arguably a principle that induces counter-cyclicity; and (ii) I assume that the inner specifiers are necessarily non-equidistant.

So, for instance, in (38a) (adapted from (27)) the order is *ergative - dative - absolutive - verbal complex*. In the tree representation in (38b), the ergative *wh*-phrase is the highest one, and therefore, first attracted by C.¹⁶ Then, the dative *wh*-phrase will follow: so as to cross the minimum number of nodes, it will land in an inner specifier of CP (moving to an outer specifier would cross more nodes). Last, the absolutive *wh*-phrase behaves accordingly: it displaces to an inner specifier below the dative *wh*-phrase. As illustrated in the tree, the base-generation arrangement of elements is reflected in the left periphery, in accordance with the Superiority Condition. In other words, the first empirical fact listed above is accounted for in this analysis.

- (38) a. Nork nori zer ekarri dio?
 who.ERG who.DAT what.ABS bring AUX
 ‘Who brought what to whom?’

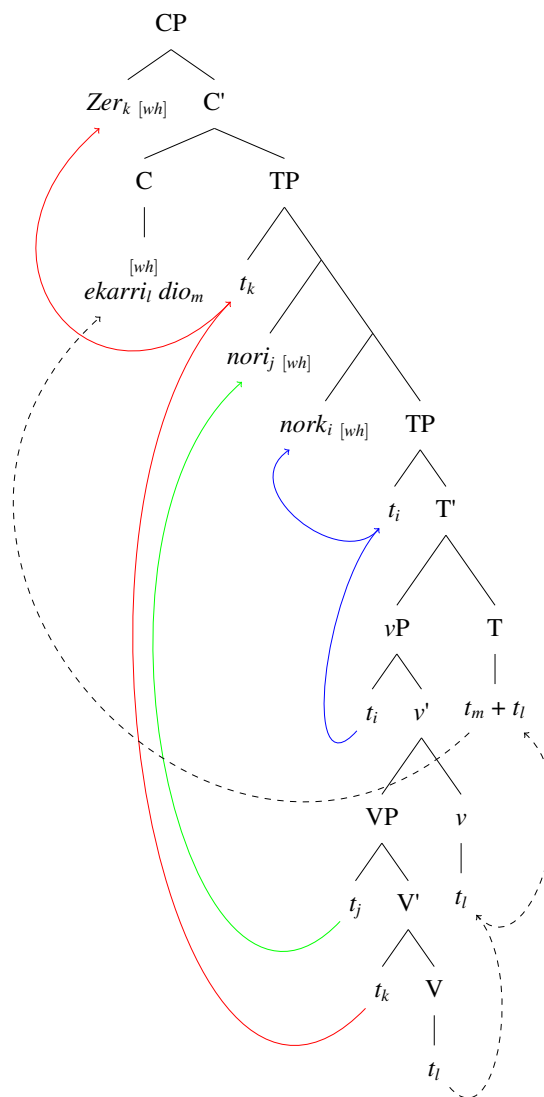


¹⁶ As I did above, I will depict copies with traces in the tree representations throughout this section.

The second empirical observation concerns the lack of superiority effects in SWF (O2). Instead of having all three *wh*-phrases fronted as in (38a), in the SWF strategy in Basque two of the *wh*-phrases are in situ. Interestingly, the fronted *wh*-phrase can be any (e.g. the absolutive *wh*-phrase in (39a)). A first (provisional) attempt to describe the observations could be as follows: scrambling feeds *wh*-movement in SWF. In Basque, DPs can scramble, and even if that operation is often associated to different information structures, when elements are postverbal it does not have to. For SWF, I stipulate that *wh*-phrases scramble before *wh*-movement. Consequently, Closest Attract will pull the highest one, which is not obligatorily the ergative *wh*-phrase. The tree representation for (39a) is given in (39b).

- (39) a. Zer ekarri dio nori nork?
 what.ABS bring AUX who.DAT who.ERG
 ‘Who brought what to whom?’

b.



Of course, this analysis raises many questions. The most prominent one is: how can the system bar scrambling to take place in MWF but not in SWF? Right now this issue lacks formalisation in this model. Nevertheless, resorting to scrambling can also aid us to explicate why postverbal *wh*-phrases do not display the baseline order of arguments in Basque (O3).

Going back to ellipsis, regarding MS, I argue that MS in Basque is instantiated by two operations: MWF and deletion. This elliptical construction is more selective than overt regular syntax in the sense that it only corresponds to one mechanism of multiple *wh*-question available in the language. This could be correlated to the uncontroversial assumption that no focal element can be in the ellipsis site; namely, focus-marked elements necessarily escape the ellipsis site prior to deletion (*à la* Merchant 2001, 2004).

As far as the nature of deletion is concerned, an anonymous reviewer suggested that I could easily implement deletion by assuming that the C head contains the [E] feature put forth by Merchant (2001). Nonetheless, proposing that the [E]-feature in C elides its sister-complement TP is not compatible with the empirical observations from Basque, as we will see. In fact, this formal move faces several difficulties when accounting for cross-linguistic data as well. Let's illustrate the problem with English first:

- (40) A: Mary has dated someone.
 B: Who has Mary dated?
 B': *Who Mary has dated?
 B'': Who (*has)?

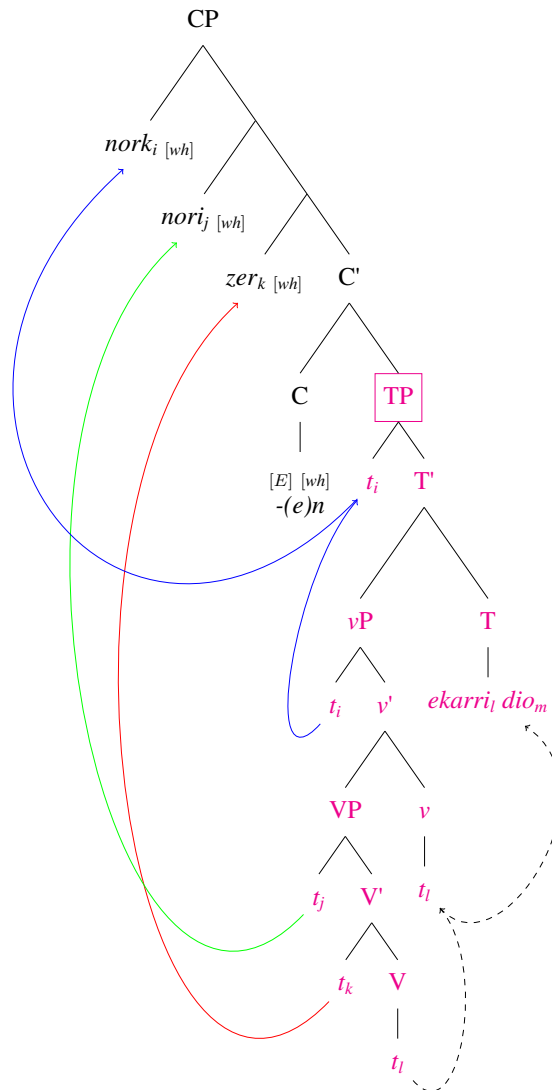
(Adapted from Landau 2020:375)

In English matrix *wh*-questions (40B) the auxiliary has been standardly analysed as raising from the T head to the C head (a.m.o. Pesetsky & Torrego 2001). Specifically, this is highlighted by the unacceptability of (40B'), where no subject-auxiliary inversion takes place. Nevertheless, it is a well-known fact that the T material sitting in C cannot survive matrix sluicing (40B''). Hence, TP deletion does not seem to be the most explanatory analysis for matrix sluicing in English, unless one argues that deletion suppresses regular T-to-C movement that occurs otherwise (Lasnik 1999; Merchant 2001; Boeckx & Stjepanović 2001), but that, of course, does not come without a cost to the theory.

In Basque, positing T-to-C aids us to explain the rigid order of constituents in *wh*-questions and foci (see §2 above). The immediate adjacency preserved between the verbal complex and the *wh*-phrase/focus can be accounted for that way. Nothing can intervene in between the two positions, which can be explained if the verbal complex has moved from T to C and is now adjacent to the *wh*-phrase/focus.

Let's now explore how T-to-C movement interacts with elliptical contexts in the language of study. Basque has an overt complementiser *-(e)n* in embedded complement clauses. Under the TP deletion approach without T-to-C movement (Lasnik 1999; Merchant 2001; Boeckx & Stjepanović 2001), the verbal complex would not rise to C. Yet, we would expect the C head to survive deletion, as only TP is being deleted. That is, the overt embedded complementiser in Basque should be fully pronounced (perhaps cliticised to the *wh*-phrase, especially taking into account its suffixal nature). However, the facts show otherwise (41a). How the C head would survive deletion is depicted below in (41b), where the deleted material is represented in magenta (the example is adapted from (26)).

- (41) a. Norbaitek norbaiti zerbait ekarri dio, baina ez dakit
 someone.ERG someone.DAT something.ABS bring AUX but not I.know
 nork nori zer.
 who.ERG who.DAT what.ABS
 ‘Someone brought something to someone, but I don’t know who (brought) what to whom.’
- b. Norbaitek norbaiti zerbait ekarri dio, baina ez dakit ...



The movement-suppression analysis cannot explain why the embedded complementiser goes away in (41a). Moreover, the theoretical argument for the [E] feature is circular: the [E] feature syntactically determines that it is the sister node to its head that will be elided, and the [E] feature will only appear in that head in elliptical sentences. That is, deletion happens because of the [E] feature, and the [E] feature only appears when deletion will happen. This theoretical proposal is arguably non-falsifiable.

At the current stage of this investigation, therefore, I cannot commit to the idea that deletion consists in an operation that elides a syntactically defined constituent at PF. What I can account for, though, are the following facts: MWF exhibits superiority effects due to two principles (Attract Closest and Shortest Move) (O1); (ii) plausibly, SWF does not show superiority effects since Basque is a free word order language where elements can scramble (O2); and postverbal *wh*-phrases are allowed in different arrangements of elements for the same reason (O3).

As introduced on the list, *wh*-phrases can front or not (O4). Put otherwise, any multiple *wh*-question strategy is equally available in Basque. An obvious question arises as to how the system knows how many *wh*-phrases to move, and more importantly, why. It seems that it is enough to front one. This might be related to the requirement that Basque has for *wh*-phrases and foci in single A'-movement: they must be immediately left adjacent to the moved verbal complex (see §2 above). Whether this is a syntactic constraint on movement or a phonological requirement that forces the element bearing main stress to be in the immediately preverbal position is out of the scope of this paper. I only wanted to highlight that there is this designated syntactic position for the prominent element. The requirement of filling in that spot might be satisfied by a *wh*-phrase even if there are more, but as I said, this is purely speculative and open for further exploration.

Last, taking stock of the discussion brought up in the introduction at the beginning of this paper, movement *is* a prerequisite for certain cases of ellipsis. Based on empirical evidence, the MDA cannot account for *every* elliptical structure cross-linguistically. Even so, some cases of ellipsis show that moving remnants (in this case, *wh*-remnants) out of the ellipsis site is the only available operation preceding deletion. For Basque this is not an extremely unwelcome consequence in the sense that it does not involve any additional theoretical move. The multiple *wh*-question strategy that underlies MS in Basque is independently available in the language, which restrains us from stipulating exceptional movement operations for MS in Basque.

6. Conclusion

In this paper I have analysed MS in Basque. The theoretical proposal put forward relies exclusively on the notions of movement and deletion. That means (i) that the ellipsis site comprises silent structure therein and (ii) that all *wh*-remnants need to undergo movement prior to deletion.

I have introduced three possible input strategies for MS, and I have tested them against two different conditions: the Superiority Condition (Chomsky 1973) and the Clausemate Condition (Takahashi 1994). By doing so, I have shown that MWF in Basque exhibits the same syntactic constraints as MS: they both abide by the aforementioned constraints. Those effects are directly dependent on the existence of internal structure within the ellipsis site. Moreover, we have seen that movement is necessary for MS in Basque. Even if MWF is an already available grammatical operation in Basque, it becomes a *must* before deletion. Hence, the MDA can account for the attested data.

The current work has formal implications for theories of ellipsis. In the case presented, MS is pickier than regular syntax when it comes to the input structure that feeds deletion; ellipsis is more constrained than overt syntax. In other words, deletion influences syntax, and movement is contingent upon deletion. To answer the question I posed at the beginning, movement is a prerequisite at least for some elliptical structures, as it is the case for MS in Basque.

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Abbreviations

ABS	absolute	IPFV	imperfective
ACC	accusative	NMLZ	nominalizer/nominalization
AUX	auxiliary	NOM	nominative
COMP	complementiser	PTCP	participle
DAT	dative	Q	question particle/marker
ERG	ergative	TOP	topic

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Morpho-semantic notes on *unhappier*

Taika Nagano & Kanta Tateno

The aim of this paper is to propose a new approach to *bracketing paradox* phenomena in the framework of Distributed Morphology (Halle & Marantz 1993). Although in English, the comparative suffix *-er* does not attach to a trisyllabic adjective, *unhappier* is exceptionally possible. Focusing on the negative prefixes *un-* and *in-*, we argue that the exceptional comparative form is attributed to the timing of prefixation of *un-*. We give some suggestive empirical evidence from the perspectives of (morpho-)phonology and semantics.

1. Introduction

There is a long-standing morphological issue observed in English comparative constructions. The comparative morpheme in English can be realized in a synthetic or an analytic form. When an adjective with fewer than three syllables changes to a comparative form, the suffix *-er* attaches to it. In contrast, the comparative morpheme *more* is chosen when the adjective has more than two syllables. However, adjectives like *unhappy* can form the synthetic comparative *unhappier* even though *unhappy* is trisyllabic. The present study aims to explain why this morphological exception occurs, within the framework of Distributed Morphology (Halle & Marantz 1993) (henceforth, DM).

The paper is organized as follows. In Section 2, we provide the basic morphological characteristics of comparative morphemes in English, and an overview of what is called the *bracketing paradox*. Section 3 presents our proposal that the negative prefix *un-* attaches to a stem that has already undergone categorization, which makes exceptional forms like *unhappier* possible. In Section 4, we discuss the extensions of our analysis in terms of phonology and semantics. As phonological support, we use deverbal compounds in Japanese as examples. In Japanese, when compounding occurs, some complex words show consonant voicing of the second part. This phonological effect seems to align with our analysis of the negative prefixes in English. Additionally, we will briefly discuss the semantics of affixal negation in English.

2.1. Bracketing paradox

The morphological structure in (3) poses no semantic issue, but it violates the phonological

condition that a trisyllabic adjective should use the analytic comparative morpheme. Therefore, the structure in (4) should be more appropriate morphologically.

2.2. Previous studies

As we have seen above, the selection of comparative morphemes depends on specific phonological conditions of the adjectival stem, namely, the number of syllables. Additionally, while the synthetic morpheme *-er* functions as a suffix, the analytic *more* appears to the left of its stem. This difference in linear order is hard to explain through phonological methods. The phenomenon falls into morphology as well.

One of the plausible accounts that captures the distribution of comparative morphemes in English is presented in Embick (2007), in which it is argued that a post-syntactic operation called *Left Dislocation* (LD, henceforth) plays a role in the synthetic/analytic distinction of the comparative morphemes. LD, whose example is shown in (5-b), takes place after the linear orders are fixed (Linearization) and the phonological information of terminal nodes is supplied (Vocabulary Insertion), changing the linear order of morphemes.

When the analytic comparative *more* is derived, there are three steps, as presented in (5). The realization of the comparative morpheme is assumed to be the synthetic *-er*, as in (5-a), and the notation in (5-b) means that the phonological property of the adjective changes *-er* to *more*. The operator *** seen in (5-b) indicates linear adjacency while *X*Y* denotes that ‘X is left-adjacent to Y.’ Note that LD alters the linear order of ROOT and CMPR when the ROOT, the adjectival base, is composed of at least three syllables. We make a distinction between CMPR and CMPR to indicate that the former is a terminal node with no phonological information and the latter is a phonological exponent, *-er* in this case. The third rule in (5-c) guarantees that when *-er* precedes the adjectival root, it is realized as *more*. This is called *mo*-support, similar to *do* support.

- (5) a. CMPR $\leftrightarrow$ *-er*
 b. LD: ROOT*CMPR $\rightarrow$ CMPR-ROOT / $\sigma_{n \geq 3} \in \text{ROOT}$
 c. *-er* $\rightarrow$ *more* / _____-ROOT

If the comparative *more* is derived under such procedures, the problem is the LD as presented in (5-b). When we take into consideration the exceptional forms like *unhappier*, *unfriendlier*, and *unrulier*, we have to modify the condition in (5-b), or find an alternative solution.

Although the bracketing paradox has attracted many researchers, there is no consensus on how to analyze this phenomenon. One well-known strategy is affix raising (Pesetsky 1985), in which exceptional affixation like *unhappier* is possible.

Another approach is percolation (Lieber 1980). According to Bobaljik (2012), the adjectival root *happy* has a diacritic feature $[+M]$. When *unhappier* is derived, *unhappy* is formed first. The feature $[+M]$ from *happy* percolates up to *unhappy*, and allows *-er* to exceptionally suffix to the trisyllabic base, hence *unhappier*. This is shown in (6).

- (6)
- ```

 unhappier
 / \
 unhappy[+M] -er
 / \
 un- happy[+M]

```

Both affix raising and percolation succeed in giving explanations for the *bracketing paradox*, but they require additional strategies like a filter or a feature. In this paper, we would like to examine the phenomenon without additional rules or exceptional assumptions to derive the paradoxical structure.

### 2.3. *un-* vs. *in-*

To find out why *unhappier* is possible, we compare the negative prefixes, *un-* and *in-*. It is natural that the prefix *un-* somehow contributes to the exceptional behavior of the comparative *-er* since all the observed exceptions contain *un-*.

When it comes to the negative prefix *in-*, no exceptional comparative form is derived. Rather, an adjective with *in-* seems to prefer *more* in comparative constructions.

- (7) a. John is { **\*more unhappy / unhappier** } than Bill.  
 b. John made { **more improper / \*improperer** } distinctions than others.

Take the adjective *proper* as an example. Being disyllabic, it becomes trisyllabic when prefixed by *in-*, so the synthetic comparative form *improperer* is inappropriate, and instead, *more improper* is chosen, as in (7-b).

Note that of the adjectival roots choose the synthetic form when forming comparatives, as in (8). Thus, the adjectives themselves do not specify the morphological property of the comparative morpheme.

- (8) a. John is **happier** than Bill.  
 b. John made **properer** distinctions than others.

This contrast suggests that the classes of the negative prefixes should be associated with the synthetic/analytic distinction of the comparative morphemes.

### 3. *Timing of affixation, and the categorization assumption*

This section discusses why the synthetic comparative *-er* can exceptionally suffix to some trisyllabic adjectives containing the negative prefix *-un-*. Our idea, to put it simply, is that in the case of *unhappier*, the suffix *-er* targets the adjectival root *happy* alone, and after *happier* is formed, the prefix *un-* attaches to *happier*. That is, the morphological structure in (4) is naturally derived without some additional operations like the percolation of a diacritic feature.

In the previous section, we have seen that while some adjectives with the negative prefix *un-* exceptionally permit a synthetic comparative form like *unhappier*, those with the negative prefix *in-* prefer an analytic comparative form like *more improper*. We also argue that the timing of prefixation differs between *un-* and *in-*. While, as we have mentioned, *un-* targets a root that has already been categorized as an adjective, *in-* attaches to an acategorical root. Under these assumptions, it is naturally predicted that nothing prevents *unhappier* from being derived because the comparative *-er* attaches to the disyllabic adjective *happy*.

### 3.1. Theoretical assumptions

Before moving to a detailed discussion, let us specify some theoretical assumptions from DM. In this framework, it is assumed that functional heads and acategorial Roots are subject to the syntactic operation *Merge*. In order for a Root to be properly treated, it merges with a category-defining functional head. For example, an adjective *happy* is seemingly just a word, but in DM it is considered to be the combination of the Root  $\sqrt{\text{HAPPY}}$  and the adjectival categorizer *a*. This is called *Categorization Assumption*.

- (9) **Categorization Assumption:** Roots cannot appear without being categorized; Roots are categorized by combining with category-defining functional heads.  
(Embick & Noyer 2008:296)

The important property of category-defining functional heads is that they define a domain called *phase* (cf. Chomsky (2001)).

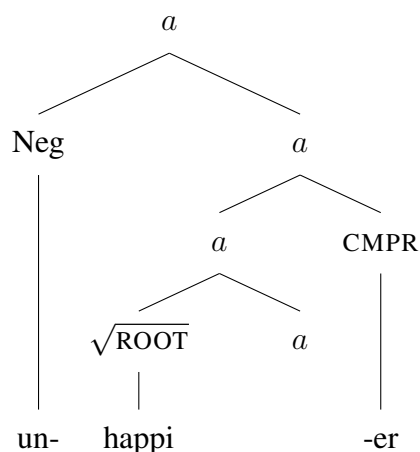
- (10) Category-defining heads *n, v, a*, and so on, are *cyclic* heads: such heads define the *phases* that trigger Spell-Out.  
(Embick 2010:51)

Intuitively, *happy* is a single word, and this wordhood corresponds to what we call a domain. In syntactic literature, phase theory plays an active role, but at least in this paper, we interpret *phase* as a maker of a linguistic unit, especially a word. In Section 4, we will discuss how phases work in morphology.

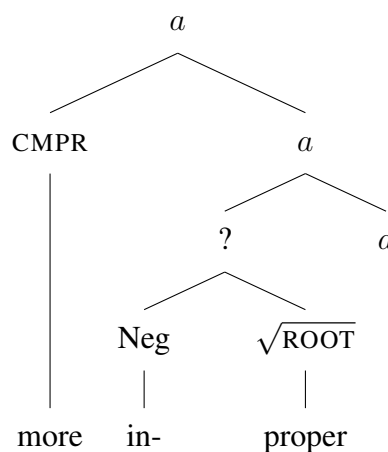
### 3.2. Derivations

We argue that (i) the comparative head CMPR selects a root categorized as an adjective, (ii) the negative prefix *un-* merges after the root has undergone categorization, and (iii) the negative prefix *in-* merges with an categorized root. These are illustrated in (11) and (12).

- (11) *un-ROOT-er* (e.g., *unhappier*)



- (12) *more in-ROOT* (e.g., *more improper*)



The tree in (11) shows the morphological structure of *unhappier*. The adjective *happy* is derived first and foremost. Specifically, the Root  $\sqrt{\text{HAPPY}}$  merges with the adjectival categorizer, and it is phonologically realized as  $\sqrt{\text{HAPPY}}$ . Then, the head *CMPR* merges with the amalgam of



$\sqrt{\text{HAPPY}}$  and *a*. Lastly, the Neg head merges with *happi*-CMPR. When another phase head appears, Spell-Out is triggered, and Vocabulary Insertion takes place, supplying the string of ‘Neg-happi-CMPR’ with the phonological information, resulting in *un-happi-er*. Crucially, the present analysis does not depart from the standard rule, widely recognized in the literature, that trisyllabic adjectives always appear in analytic form when comparative.

As for *more improper* in (12), the Neg head merges with  $\sqrt{\text{PROPER}}$  before the Root is categorized as an adjective. That is, *improper* is formed before CMPR appears. Only after the amalgam of Neg+ $\sqrt{\text{PROPER}}$  is categorized as an adjective does CMPR merge because CMPR selects an adjectivized root as its complement. Note that CMPR merges with the amalgam headed by *a* in both (11) and (12).

Again, our explanation for the reason why *unhappier* is exceptionally possible is that CMPR targets only the adjectival root *happy*, and then the prefix *un-* appears. In the next section, we will provide empirical evidence for the derivations in (11) and (12) from both phonological and semantic perspectives.

#### 4. Phonological/semantic consequences

##### 4.1. Class I vs. class II

Under the assumption that there are level orderings of affixation in the *Lexicon*, the negative *in-* should attach to its stem prior to *un-*. Siegel (1974) classifies the former as a Class I affix and the latter as Class II affix. The point is that Class I affixes exert some effect on the phonological properties of their stems, but those in Class II initiate no phonological change.

For instance, *in-* is a Class I affix, and can change the phonological form of its own, as presented in (13-a). When *in-* attaches to the adjective *rational*, *in-* changes to *i-*, and *inrational* is ill-formed. On the other hand, *un-* does not change, as in (13-b).

- (13)    a.     $\text{in}_{\text{Neg}+\text{rational}} \rightarrow [\text{ɪr}é\text{ʃ}ə\text{n}l]$  (irrational)  
           b.     $\text{un}_{\text{Neg}+\text{ready}} \rightarrow [\text{ʌn}ré\text{d}i]$  (unready)

Our proposal that *un-* attaches to a categorized root while *in-* merges with an acategorial root can correctly predict the cases in (13). Since *in-* and the root are in the same domain, the prefix can refer to its root and thus undergoes phonological change. On the contrary, *un-* is not affected by its stem because of the categorizer *a*.

##### 4.2. Deverbal compounds in Japanese

Japanese offers further support. The language features many deverbal compounds, formed by X+V. The relation between X and V is twofold: X is either an internal argument or an adjunct of V. Examples are presented in (14).

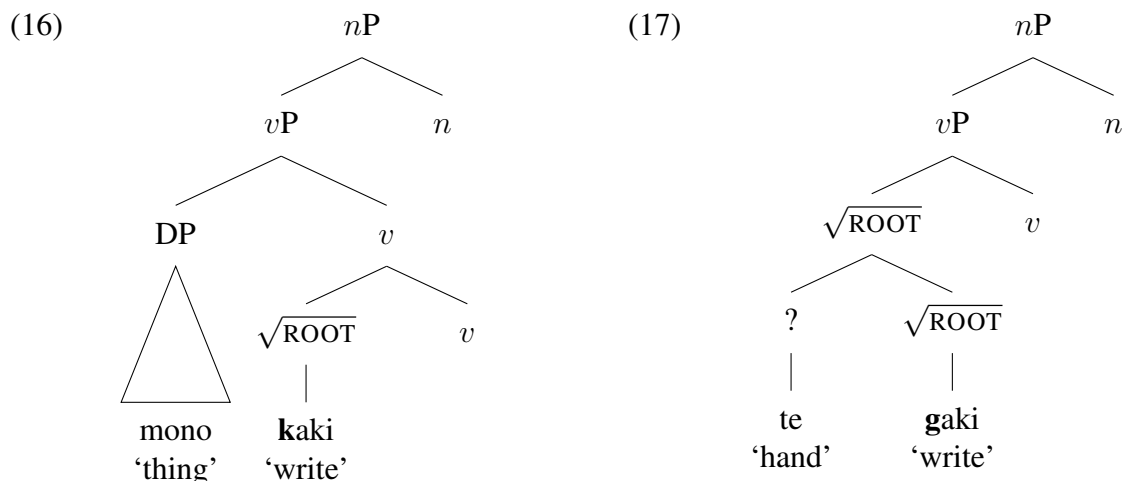
- (14) a. Kare-no shokugyoo-wa mono-**kaki**-da.  
 he-GEN occupation-TOP thing-writing-COP  
 'His occupation is writing.'  
 b. Sono-sakka-wa te-**gaki**-o konomu.  
 the-author-TOP hand-writing-ACC like  
 'The author likes handwriting.'

In (14-a), the compound *mono-kaki* 'thing-writing' denotes the event of writing something, with *mono* 'thing' being an internal argument of the verb *kaki* 'writing'. In the case of *te-gaki* 'hand-writing' in (14-b), the compound follows the same formation as *mono-kaki*, but *te* 'hand' modifies the verb *gaki* 'writing', literally meaning 'with a hand'.

These types of compounds show phonological differences according to the property of X. When X is an adverb and modifies V, as in (14-b), the first consonant of V becomes voiced. A voiced verb is a bound morpheme, so it cannot be used independently as a regular verb.

- (15) Taro-ga Hanako-ni tegami-o {**kaki** / \***gaki**}-tai-soo-da.  
 Taro-NOM Hanako-DAT letter-ACC write-want-EVID-COP  
 'It seems that Taro wants to write a letter to Hanako.'

Nishiyama (2020) provides an account for these phonological characteristics of deverbal compounds in Japanese. When X is an internal argument, the structure is as shown in (16). The verb *kaki* 'write' firstly undergoes verbal categorization, and the internal argument *mono* 'thing' merges with it. As for the cases where X is a modifier, the adverbial element merges with the Root before categorization as a verb, as in (17).



What is important here is that there is no consonant voicing when X is an internal argument, but when X is an adjunct, the first consonant of the verb can be voiced. This is because in the latter case, X merges with the root before the categorization, and the result of this process is treated as a single (phonological) word.

The Japanese facts thus reinforce our phase-based analysis. When compounding involves an adjunct, merger takes place at the root level, prior to categorization, and phonological interaction (voicing) is observed. By contrast, when compounding involves an internal argument, merger occurs only after categorization, and no phonological effect arises. This contrast mirrors the English data: the prefix *in-* behaves like the adjunct in Japanese, attaching pre-categorically

and permitting phonological alternations, whereas *un-* attaches post-categorically, like an internal argument, and remains phonologically inert. Crucially, the Japanese evidence suggests that the timing of affixation is not an idiosyncratic property of English negation but reflects a more general principle whereby morphological domains determine the availability of phonological processes. In the following subsection, we show that similar structural distinctions account for the semantic contrast between *un-* and *in-*, complementing the phonological evidence with interpretive data.

### 4.3. Semantic consequences of *in-* and *un-*

#### 4.3.1. Overview

Negative prefixes in English, such as *un-* and *in-*, are both widely used to antonymic forms. Despite their apparent morphological similarity, these prefixes exhibit distinct semantic behaviors, particularly in their interaction with gradable adjectives and comparative constructions. This section explores the semantic contributions of these prefixes, arguing that their differences reflect deeper structural and interpretive distinctions. We aim to show that the prefix *un-* preserves the standard of evaluation of its base, thereby allowing degree-based comparison, while *in-* shifts or redefines the evaluative standard, rendering comparison infelicitous.

#### 4.3.2. Theoretical background

To begin with, we introduce two types of affixal negation — direct negation and indirect negation, following Joshi (2020). This distinction is crucial for understanding how different negative prefixes interact semantically with their base forms.

- **Direct negation:** exemplified by *un-*, retains the evaluative scale of the base. For example, *unhappy* still references the happiness scale, albeit on its negative side, allowing gradability (e.g., *unhappier*).
- **Indirect negation,** as seen in *in-*, shifts or redefines the semantic space of the base, often introducing a qualitatively distinct meaning (e.g., *infamous* ≠ simply “not famous”). This shift tends to preclude scalar comparison due to the altered evaluative standard.

#### 4.3.3. Empirical observations

In this section, we introduce two empirical observations, namely (i) compatibility with comparative morphology, and (ii) degree vs. frequency interpretation.

- (18)    a. Bill is happy, and John is unhappier than Bill.  
           b. #Bill is famous, and John is more infamous than Bill.

In (18-a), the prefix *un-* attaches to the adjective *happy*, and the derived form *unhappy* still refers to a position on the same happiness scale. Therefore, it admits comparison via the suffix *-er*. In contrast, (18-b) is pragmatically odd: *infamous* does not reside on the same scale as *famous*, making *more infamous* an infelicitous comparative form.

- (19) a. **Degree dimension:** I must be {more unhappy / unhappier} than you are.  
       – You’ve lost 100 dollars, and I’ve lost 1000 dollars.  
       b. **Frequency dimension:** I’m {more unhappy / # unhappier} than you are.  
       – You always have some troubles, but I don’t.

The sentence in (19-a) compares the depth of unhappiness (degree), whereas the example in (19-b) contrasts frequency. The analytic form *more unhappy* is preferred in the frequency reading. This supports Cinque’s (1999) proposal that a frequency adverb occupies a structurally higher position than that of degree modifiers. This structural layering suggests that *more* can outscope event-level adverbs, unlike *-er*, which stays local to the adjective.

#### 4.3.4. Structural conditions on interpretation

We propose that the interpretive contrast between *un-* and *in-* arises from their distinct attachment sites in the morphosyntactic structure. Specifically, *in-* attaches to the Root before categorization, allowing it to integrate with the root’s lexical semantics and affect the standard of comparison. This early merger enables semantic reinterpretation, consistent with the behavior of indirect negation.

In contrast, *un-* merges after categorization has applied, targeting a fully categorized adjective phrase (*aP*). Since the adjective has already been associated with an evaluative scale, *un-* operates as a semantic polarity operator, preserving the original scale and enabling degree-based comparisons such as *unhappier*.

This structural difference aligns with the comparative compatibility patterns: *un-* derivatives maintain transparency and scalarity, while *in-* derivatives tend toward semantic opacity and categorical reinterpretation.

### 5. Conclusion

This paper has pursued an explanation of why *unhappier* is possible even though *unhappy* is trisyllabic. Our idea is that the negative prefix *un-* is transparent and the comparative morpheme attaches to the disyllabic adjective *happy* alone. The reason *un-* can be ignored is that CMPR selects a root which has undergone adjectival categorization and *un-* appears after suffixation. In comparing *un-* and the other negative prefix *in-*, we find that *in-* merges with a non-categorized root and thus can phonologically interact with its root. Our analysis is in line with Siegel’s (1974) Class I vs. II approach, and correctly captures the phonological differences between them. We have also shown that similar behavior is observed in Japanese. Deverbal compounds are productive in the language, and their phonological variation can be accounted for in the same way. The anti-compositional property of *in-* suggests that *in-* should be treated together with its root since some adjectives with *in-* are ‘idiomatic’ and hardly predicted from their constituents. These facts support our phase-based morphological analysis of *unhappier*.

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# Polarity-sensitive exceptives: the case of Chechen

Maria Berkovich

In several languages, the semantics comparable to that of *only* can be expressed with a bi-partite construction, which consists of a negation marker and a focus particle. This work investigates one such construction in the Chechen language. I try to show that its properties are not captured by the existing analyses of such constructions and to explore some alternative approaches.

## 1. Introduction

In a number of unrelated languages, the semantics comparable to that of *only* can be expressed with a bi-partite construction, which consists of a negation marker and a focus particle. Some examples of this construction are presented in (1).

- (1) a. Dhen idha para ton Yani.  
NEG saw except the Yanis.ACC  
'I only saw Yanis.'  
(Greek; von Fintel & Iatridou 2007:457)
- b. Je n'ai vu que Jean.  
I NEG-have seen QUE Jean  
'I only saw Jean.'  
(French; von Fintel & Iatridou 2007: (56))
- c. Susi-sika sushi-o tabe-na-katta.  
Susi-SIKA sushi-ACC eat-NEG-PST  
'Nobody but Susi ate sushi.'  
(Japanese; Sauerland & Yatsushiro 2023: (9))

To derive the meaning of such constructions in a compositional way, the existing works (e.g., von Fintel & Iatridou 2007; Sauerland & Yatsushiro 2023) assume that elements like *que*, *para*

and *sika* function similarly to exceptives, such as *but* and *except* in English; *I only saw Jean* can be paraphrased as *I did not see anyone but Jean*, with the two sentences triggering similar inferences. In the latter case, *anyone* contributes existential quantification, while *but* restricts the domain of the existential quantifier, subtracting the individual *Jean* from it. According to von Stechow & Iatridou (2007); Sauerland & Yatsushiro (2023), an important difference is that in constructions like (1a)–(1c), the existential quantifier is covert, and *que*, *para*, and *sika* are taken to denote an exceptive that restricts the domain of this quantifier. Another important property of the constructions at hand is that the exceptive element cannot appear without negation, standing in an NPI-licensing relation with it.

This work discusses a similar construction in Chechen, a highly underdescribed Northeast Caucasian language spoken primarily in the Chechen Republic of Russia.<sup>1</sup> The construction is illustrated in (2): the particle *bien* is the Chechen counterpart of items like *que*; omitting sentential negation results in ungrammaticality.

- (2) a. muusa bien \*(ca) v-ea-na  
       Musa BIEN \*(NEG) CL-come-PERF  
       ‘Only Musa came.’
- b. as šura bien \*(ca) eec-na  
       1SG.ERG milk BIEN \*(NEG) buy-PERF  
       ‘I only bought milk.’

I investigate the distribution of the particle *bien*, showing that, unlike in the languages mentioned above, the exceptive element gets licensed not only in negative contexts, but also in polar questions, which is rather unexpected under the existing approaches. Another important property of *bien* is that it can occur both with and without an overt quantifier, which, as I will show, poses a problem for the existing analyses.

The paper is structured as follows. Section 2 describes the distribution of the focus particle *bien*, showing that it is only licensed in the scope of negation and in polar questions. Section 3 discusses the existing approaches to NEG + exceptive constructions and the subset of *bien*’s properties that they can account for. Section 4 shows that *bien*-exceptives can occur either with or without an overt quantifier, which is shown to be problematic for the previous analyses. I explore possible ways to resolve this issue. Section 5 discusses the difference in the interpretation of *bien* with and without a quantifier that arises in questions. Section 6 concludes.

## 2. The distribution of Chechen *bien*-exceptives

### 2.1. Downward entailing environments

Following Fauconnier (1978); Ladusaw (1979) *et seq.*, I assume that negative polarity items (NPIs) are licensed in downward-entailing (DE) environments. One of the prototypical examples is English *any*, which is felicitous in negative episodic sentences (3a) while similar positive sentences with *any* are ill-formed (3b).

<sup>1</sup> Chechen is an SOV language with ergative-absolutive alignment. The estimated number of speakers is 1 493 748, according to the 2021 census. All the Chechen data comes from the author’s original fieldwork carried out via virtual elicitation sessions with five consultants.

- (3) a. *John didn't see any students.*  
 b. \**John saw any students.*

DE environments include the restrictor of a universal quantifier, conditional antecedents, expressions like *few* or *at most*, and some other contexts. Zwarts (1998) proposed a hierarchy of DE environments, which is based on their logical properties. NPIs may be classified with respect to the strength of the contexts that license them. Strong NPIs are licensed in antimorphic or anti-additive contexts, while weak NPIs can be licensed in all DE contexts.

### 2.1.1. Strong DE environments

We are now in a position to investigate the distribution of *bien*-phrases in Chechen with respect to these contexts, starting with the strongest ones. The relevant environment is the scope of sentential negation, which is realized by the morpheme *ma* in the imperative and the optative and by *ca* in all other cases (Molochieva 2011). Both *ca*-negation and *ma*-negation license *bien*-phrases (4)–(5).

- (4) muusa bien \*(ca) v-ea-na  
 Musa BIEN \*(NEG) CL-come-PERF  
 'Only Musa came'

- (5) ciga bien \*(ma) gho-la-ḥ  
 there BIEN \*(PROH) go-IMP-2SG  
 'Go only there!'

Regarding the Japanese NEG + exceptive construction formed with *sika*, it has been claimed that the negation morpheme does not have the same properties as ordinary sentential negation with respect to NPI licensing (e.g., Hasegawa 2011). Examples like (6a) are viewed as an argument against treating *sika* as a genuine NPI, since the negation cannot license another NPI, *nanimo*. Consequently, negation in this construction is assumed to be expletive. By contrast, in Chechen, such a configuration is possible (6b): the NPI indefinite *cha ʔa* 'any' (lit. 'even one') is licensed by negation that also licenses the *bien*-phrase. This indicates that *ca* in the construction at hand is not expletive negation.

- (6) a. \*Daisuke-shika nanimo tabe-na-katta  
 Daisuke-SHIKA anything eat-NEG-PST  
 Int.: 'Only Daisuke ate anything'

(Japanese; Hasegawa 2011: (2.47))

- b. muusa-s bien cha ʔa huma ca eel-ira  
 Musa-ERG BIEN one ADD thing NEG say-WPST  
 'Only Musa said anything'

Some other strong DE environments that license NPIs are the scope of negative universal quantifiers, such as *no* and the scope of *without*. In Chechen, there are no direct equivalents of these items.



## 2.1.2. Weak DE environments

Turning to weaker contexts, specifically, those that are not anti-morphic, it can be shown that they fail to license *bien*-phrases. This point is illustrated for the restrictor of the universal quantifier (7) and the antecedent of a conditional (8).

- (7) \***hora** [ħalxara heesap **bien** d-in-čũ] beer-o qo? d-aqq-ina  
 every first problem BIEN CL-do.PTCP.PST-OBL child-ERG three CL-get-PERF  
 Int.: ‘Every child who solved (anything) but the first problem got a C (3)’

- (8) \*aħ pxi? bien d-aqqa-ħ, so öghaz-gh-ur v-u  
 2SG.ERG five BIEN CL-get-COND 1SG angry-go-FUT.PTCP CL-AUX.PRES  
 Int.: ‘If you get (anything) but an A (5), I’ll get angry’

Finally, DE contexts that are not anti-additive, fail to license *bien*-phrases, too. This is the case for *k’ezig* ‘few(er)’ (9).

- (9) \*ħalxara heesap bien itt-anal k’ezig beer-o d-i-na  
 first problem BIEN ten-CMPR few child-ERG CL-do-PERF  
 Int.: ‘Fewer than ten children solved (anything) but the first problem’

To conclude, of all DE environments, only anti-morphic ones license *bien*-phrases.

## 2.2. Questions

Although it is unclear whether an entailment relation can be shown to hold between questions (see Guerzoni & Sharvit 2007 for discussion), in many cases, they do license NPIs (10).

- (10) a. *Did you eat anything?*  
 b. *Who cooked anything?*

However, while English weak NPIs can occur in canonical information-seeking questions, strong NPIs are either not licensed in questions, or induce a negatively biased interpretation of the question they occur in (Ladusaw 1979; Heim 1984 *et seq.*) (11).

- (11) a. *Have you seen Mary in years?*  
 b. *Who lifted a finger to help you?*

*Bien*-phrases are licensed in polar questions (12). Such questions do not trigger a rhetorical interpretation, and are compatible with a positive answer, which shows that they trigger no negative bias.

- (12) muusa bien c'a-ħ v-u-i?  
 Musa BIEN house-INNESS CL-AUX.PRES-Q  
 'Is only Musa at home?'

By contrast, constituent questions with *bien*-phrases are generally judged as unacceptable. This is the case both when the *bien*-phrase occurs in the question nucleus (13a) and in the restrictor (13b).

- (13) a. \*taxana bien bolx ħa b-i-na?  
 today BIEN work who.ERG CL-do-PERF  
 Int.: 'Who worked (at any time) but today?'  
 b. \*aħ bien ħa bolx b-i-na?  
 2SG.ERG BIEN who.ERG work CL-do-PERF  
 Int.: 'Who other than you worked?'

However, one corpus example has been discovered, where a *bien*-phrase restricts a quantifier introduced by a *wh*-expression.<sup>2</sup> This question was accepted by the speakers and reported to be rhetorical, resembling *but* in English *wh*-questions (Mayr & Vostrikova 2024).

- (14) so bien qin mila xi-r v-u sai-n txov t'eh?  
 1SG BIEN else who be-PTCP.FUT CL-AUX.PRES 1SG.REFL-GEN roof on  
 'Who but me would be on my roof?'

The relevant difference between polar and constituent questions is possibly tied to the presence of the question marker *-(i)i*, which can only occur in a polar question. This conjecture is supported by the data on polar questions without *-(i)i*, such as (16). What exactly is difference in the interpretation of questions with and without the question particle is left for future research.

- (15) muusa c'a-ħ v-u?  
 Musa house-INNESS CL-AUX.PRES  
 'Is Musa at home?'

Questions that lack the *-(i)i* particle do not license *bien*:

- (16) \*muusa bien v-ea-ra?  
 Musa BIEN CL-come-WPST  
 Int.: 'Did only Musa come?'

<sup>2</sup> See [Chechen Text Corpus](#), retrieved 16th December 2024.

### 3. Previous analyses of NEG+exceptive constructions

Consider an example of the NEG+exceptive construction in French, which is formed by the negation marker *ne* and the particle *que*.<sup>3</sup>

- (17) Je n'ai vu que Jean.  
 I ne-have seen que Jean  
 'I only saw Jean.'

The desirable analysis of NEG+exceptive constructions should account at least for the properties listed below.

- (1) The negative inference: (17) conveys that I saw no person distinct from Jean
- (2) The positive inference: (17) conveys that I did, in fact, see Jean
- (3) The NPI distribution of the particle

von Fintel & Iatridou (2007) propose that in NEG+exceptive constructions, the particle (e.g., *que*) denotes an existential quantifier over individuals distinct from the individual denoted by its host. The lexical entry von Fintel and Iatridou assume for the exceptive element is provided in (18a): it takes an individual  $x$  and a predicate of individuals  $P$  as arguments and states that there is an individual distinct from  $x$  such that  $P$  is true of  $x$ . Thus, (17) has the LF in (18b): it states that there is no individual distinct from Jean whom I have seen. This is how the negative inference is derived.

According to von Fintel & Iatridou (2007), the positive inference, which states that I have, in fact, seen Jean, is a presupposition. The presupposition assumed for *que* is that there is a individual who I have seen (18c), which, taken together with the assertion in (18a), can only be true if the individual I saw was Jean.

- (18) a.  $\llbracket \text{que} \rrbracket = \lambda P. \lambda x. \exists y[y \neq x \ \& \ P(x) = 1]$   
 b.  $\llbracket (17) \rrbracket = \neg \exists x[x \neq \text{Jean} \ \& \ \text{saw}(I)(x)]$   
 c. Presupposition:  $\exists x. P(x) = 1$

The NPI distribution of the exceptive does not receive a direct explanation on von Fintel and Iatridou's approach.

Sauerland & Yatsushiro (2023) discuss the Japanese construction formed with the element *sika*. They assume that *sika* introduces an existential quantifier and restricts its domain. They propose that the positive inference associated with the exceptive element, as well as its distribution can be derived by the mechanisms that were proposed in the existing research on exceptives and NPIs. The starting point of their analysis is the observation that *but*-exceptives in English are also in some way restricted in their distribution: they can only occur with quantifiers that are downward monotone in their restrictor, such as *no one* or *everyone*. Quantifiers like *someone* or

<sup>3</sup> Despite the fact that *ne* can be omitted in the construction at hand, von Fintel & Iatridou (2007) still treat it as contentful negation, which licenses *que*. They argue that *que* cannot mean 'only' on its own, therefore negation is required for compositionality reasons. Following Pollock (1989), they assume that the Neg head in French can either be overtly realized as *ne* or be covert.

*exactly one* are not DE in their restrictor and *but*-exceptives are incompatible with them. This makes *but*-exceptives similar to negative polarity items such as *any*.

- (19) a. Everyone but Peggy smokes.  
 b. No one but Peggy smokes.  
 c. \*Someone/exactly one girl but Peggy smokes.

The semantic contribution of the exceptive in, e.g., (19a) amounts to at least the following inferences: 1) that everyone distinct from Peggy smokes; 2) that Peggy does not smoke. Following Hirsch (2016), Sauerland and Yatsushiro treat *but* as a domain subtractor (20).

$$(20) \llbracket but \rrbracket = \lambda x. \lambda y. x \neq y$$

The first of the inferences directly follows from *but*'s semantics. The second inference is captured on the assumption that *but* co-occurs with an exhaustivity operator, Exh (Fox 2007), which is responsible for deriving the inference. The version of Exh employed by Sauerland and Yatsushiro is defined in (21a). It takes a set of alternatives *Alt* and a proposition, *p* and asserts *p* while negating all its excludable alternatives, which in this case are *p*'s non-weaker alternatives.

- (21) a.  $\llbracket Exh \rrbracket(\llbracket Alt \rrbracket(p)) \Leftrightarrow p \wedge \forall q \in \text{excl}(p, Alt) : \neg q$   
 b.  $\text{excl}(p, Alt) = \{q \in Alt \mid p \not\vdash q\}$

Consider again the sentence in (19a) and its LF in specified in (22), which includes the exhaustification operator. The alternatives relevant for exhaustification are determined by substituting the constituent marked with focus, which denotes the exception (here, *Peggy*) with other possible constituents from the set of alternatives. Given the relevant set of individuals {*Peggy*, *Joan*, *Betty*, *Don*}, the relevant alternatives are listed in (23). The first alternative is the prejacent (*Everyone but Peggy smokes*), and all other alternatives are innocently excludable. Exh asserts the prejacent (23a), stating that everyone different from Peggy smokes (the first inference) and negates the alternatives in (23b)–(23d), stating that it is not the case that everyone different from Joan smokes, that everyone different from Betty smokes, and that everyone different from Don smokes. For that to hold, it must be the case that Peggy does not smoke. This is how the inference ‘Peggy does not smoke’ gets derived via Exh.<sup>4</sup>

$$(22) \llbracket Exh_{Alt}[\llbracket TP[\text{everyone}[\text{but } \text{Peggy}_F]\rrbracket \text{smokes}] \rrbracket$$

- (23) Alt =  
 a. Everyone but Peggy smokes  
 b. Everyone but Joan smokes  
 c. Everyone but Betty smokes  
 d. Everyone but Don smokes

<sup>4</sup> The inference ‘Peggy does not smoke’ has a presuppositional status (von Stechow 1993; Vostrikova 2019, a.o.). Nicolae et al. (2024) capture this by appealing to presuppositional exhaustification.

The exhaustification-based approach also captures the fact that *but* is incompatible with quantifiers that are non-DE in their restrictor, e.g., *someone* in (19c): asserting the first alternative and negating all the other alternatives leads to a contradiction (24). Thus, *but*-exceptives cannot occur outside of DE environments because exhaustification in non-DE environments leads to a contradiction, as has previously been suggested for NPIs like *any* and *ever* (Chierchia 2013, a.o.).

(24)  $[\text{Exh}_{\text{Alt}}[\text{TP}[\text{someone}[\text{but Peggy}_F]]\text{smokes}]]$

- a.  $\exists x.x \neq \text{Peggy} \wedge \text{smokes}(x)$
- b.  $\neg \exists x.x \neq \text{Joan} \wedge \text{smokes}(x)$
- c.  $\neg \exists x.x \neq \text{Betty} \wedge \text{smokes}(x)$
- d.  $\neg \exists x.x \neq \text{Don} \wedge \text{smokes}(x)$

Sauerland & Yatsushiro (2023) suggest that *but* is a weak NPI exceptive, while the Japanese *sika* is a strong NPI exceptive: for instance, it is not licensed in the restrictor of the universal quantifier, unlike its English counterpart. As has been shown in Section 2.1.1, this is also the case with Chechen *bien*-exceptives.

(25) \*Dono pureeyaa-mo Susi-sika umi-ni akusesu-ga aru  
 which player-MO Susi-SIKA ocean-to access-NOM exists  
 Int.: ‘Every player but Susi has access to the ocean.’

(Sauerland & Yatsushiro 2023: (18))

Treating *bien*-constructions on a par with exceptives is additionally motivated by the fact that when the restrictor is overt (more on such examples will be said in Section 4), they convey the containment inference associated with exceptives (von Fintel 1993): (26) implies that Zarina is a girl and replacing *Zarina* with the male name *Musa* leads to infelicity.

(26) {zarina/ #muusa} bien čha ʔa joʔ ca j-ea-na  
 Zarina Musa BIEN one ADD girl NEG CL-come-PERF  
 ‘No girl but Zarina/ #Musa came.’

Sauerland & Yatsushiro (2023) adopt the view on strong NPIs developed by Homer (2009); Gajewski (2011); Chierchia (2013), assuming that the reason why strong NPIs are not licensed in weak DE environments is that the alternatives utilized by Exh include not only at-issue content, but also presuppositions. When exhaustification utilizes such alternatives, it results in a contradiction in UE and weak DE environments, but not in strong DE environments. Consider how their approach accounts for the ungrammaticality of sentences like (27), repeated from (7).

(27) \*hora [ħalxara heesap **bien** d-in-čũ] beer-o qoʔ d-aqq-ina  
 every first problem BIEN CL-do.PTCP.PST-OBL child-ERG three CL-get-PERF  
 Int.: ‘Every child who solved (anything) but the first problem got a C (3)’

For now, let us assume that *bien* has a semantics along the lines of what is proposed for *que* in French by von Fintel & Iatridou (2007).

$$(28) \llbracket \text{bien} \rrbracket = \lambda P. \lambda x. \exists y[y \neq x \ \& \ P(x) = 1]$$

The lexical entry for *hora* ‘every’ is stated in (29); crucially, the restrictor is presupposed to be non-empty.

$$(29) \llbracket \text{hora} \rrbracket = \exists x: P(x). \forall x: P(x) \rightarrow Q(x)$$

The relevant alternatives in a scenario where there are exactly 3 problems on the test are of the form (30).

- (30)  $m \in \{1, 2, 3\}$
- a. Assertion:  $\forall x : \forall n : n \neq 1 : \text{solve}(n)(x) \rightarrow C(x)$
  - b. Presupposition:  $\exists x : \exists n : n \neq 1 \wedge \text{solve}(n)(x)$

The alternatives derived from the at-issue component are given in (31), and those derived from the presuppositional component are in (32).

- (31)
- a.  $\forall x : \forall n : n \neq 1 \wedge \text{solve}(n)(x) \rightarrow C(x)$
  - b.  $\forall x : \forall n : n \neq 2 \wedge \text{solve}(n)(x) \rightarrow C(x)$
  - c.  $\forall x : \forall n : n \neq 3 \wedge \text{solve}(n)(x) \rightarrow C(x)$

- (32)
- a.  $\exists x : \exists n : n \neq 1 \wedge \text{solve}(n)(x)$
  - b.  $\exists x : \exists n : n \neq 2 \wedge \text{solve}(n)(x)$
  - c.  $\exists x : \exists n : n \neq 3 \wedge \text{solve}(n)(x)$

When exhaustification applies, the alternatives in (31a) and (32a) are asserted, while those in (31b,c) and (32b,c) are negated.

- (33)  $\llbracket \text{Exh} \rrbracket(p)(A) \Leftrightarrow$
- a.  $[\forall x : \forall n : n \neq 1 \wedge \text{solve}(n)(x) \rightarrow C(x)] \wedge \neg[\forall x : \forall n : n \neq 2 \wedge \text{solve}(n)(x) \rightarrow C(x)] \wedge \neg[\forall x : \forall n : n \neq 3 \wedge \text{solve}(n)(x) \rightarrow C(x)]$
  - b.  $[\exists x : \exists n : n \neq 1 \wedge \text{solve}(n)(x)] \wedge \neg[\exists x : \exists n : n \neq 2 \wedge \text{solve}(n)(x)] \wedge \neg[\exists x : \exists n : n \neq 3 \wedge \text{solve}(n)(x)]$

There is no contradiction resulting from exhaustification in the the assertive component (33a). The negated assertion can be paraphrased as ‘somebody did not solve some problem other than the 1st one and got a C’. The conjunction of all propositions with  $m \neq 1$  is consistent with (30a): a scenario where some student solved the second problem, did not solve the first problem and got a C is possible. Applying Exh in the presuppositional component, however, results in a contradiction. It is stated that ‘somebody solved something other than the 1st problem and ‘nobody solved anything other than the 2nd problem’ and ‘nobody solved anything other than the 3rd problem’, which is contradictory. Thus, the ungrammaticality of *bien* in weak NPI licensing environments can be accounted for if we assume that presuppositions are relevant for exhaustification. However, this mechanism also derives ungrammaticality in questions, which is an undesirable result.

4. *Bien* with an overt quantifier

In addition to the construction discussed so far, there is another use of *bien*, where it occurs with an overt indefinite determiner. In (34), the indefinite *cħa ʔa* ‘any’ is allowed. The indefinite is composed from *cħa* ‘one’ and the scalar-additive particle *ʔa* (cf. Hindi *ek bhii* ‘even one’, Lahiri 1998).

- (34) muusa bien (cħa ʔa) \*(ca) v-ea-na  
 Musa BIEN one ADD \*(NEG) CL-come-PERF  
 ‘No one but Musa came.’

This indefinite is an NPI. It gets licensed in the same environments where *bien* does, i.e., the scope of sentential negation (35a) and polar questions (35b); it is not licensed in weaker DE contexts, like conditional antecedents (35c).

- (35) a. cħa ʔa \*(ca) v-ea-na  
 one ADD \*(NEG) CL-come-PERF  
 ‘No one came.’  
 b. c’a-ħ cħa ʔa v-u-i?  
 house-INESS one ADD CL-AUX.PRES-Q  
 ‘Is anyone home?’  
 c. \*cħa ʔa ħo-x tieša-ħ, cec-v-er v-u so  
 one ADD 2SG-LAT believe-COND surprised-CL-LV.FUT CL-AUX.PRES 1SG  
 Int.: ‘If anyone believes you, I will be surprised.’

If one assumes that the existential quantifier is encoded in the lexical entry of the exceptive element, as the existing approaches suggest, it is not possible for it to compose with an overt existential quantifier. Then, the existential quantifier must be introduced independently.

A way to achieve this would be to take the *bien*-phrase in (34) to denote the set of individuals different from Musa, along the lines of (36). They can either compose with an overt existential quantifier (*cħa ʔa*), or undergo existential (*ex*) type-shifting (37), which takes the extension set of bare nominals and maps it to an existential quantifier over that set, functioning as a covert indefinite article (cf. Chierchia 1998; Dayal 2004).

- (36)  $\llbracket \text{Muusa bien} \rrbracket = \lambda P. \lambda x. x \neq M \wedge P(x)$

- (37)  $ex(P_{et}) \Leftrightarrow \lambda Q_{et}. \exists x. P(x) \wedge Q(x)$

A potential problem for this approach is that *bien* can compose with elements of various semantic types. In (38a), its host is the adverbial ‘tomorrow’, in (38b) it is the conditional antecedent, and in (38c), *bien* occurs with a focused embedded question.<sup>5</sup>

<sup>5</sup> In periphrastic tenses, used in (38a) and (38b), the negation morpheme is suffixed to the auxiliary.

- (38) a. so qaana bien v-ogh-ur v-aa-c  
 1SG tomorrow BIEN CL-come-FUT CL-AUX.PRES-NEG  
 ‘I will only come tomorrow’
- b. muusa [vai qaiqa-h] bien v-ogh-ur v-aa-c  
 Musa 1PL.INCL call-COND BIEN CL-come-FUT CL-AUX.PRES-NEG  
 ‘Musa will come only [if we call (him)]<sub>F</sub>.’
- c. [ho c’a-h v-u-i älla] bien as ca xätt-ina  
 2SG house-INESS CL-AUX.PRES-Q COMPL BIEN 1SG.ERG NEG ask-PERF  
 ‘I only asked [if you were home]<sub>F</sub>.’

On a monosemic approach, the fact that the exceptive element can compose with elements of various semantic types can only be captured if one assumes that *ex* type shifting can apply cross-categorially.<sup>6</sup>

If one wishes to avoid a cross-categorical type-shifting operation, a polysemic approach can be assumed. It would state that when *bien* occurs with an overt quantifier, it has the semantics specified in (36), composing with the QP in the same way regular exceptives like *but* do. In cases when there is no indefinite determiner, *bien* denotes a propositional operator, similarly to *only* (e.g., Hirsch 2017; Bassi et al. 2022). The semantics of *only* on this approach is given in (39), where *C* is the context parameter which provides the set of alternatives.

$$(39) \llbracket \text{only} \rrbracket^C = \lambda p_{st}. \lambda w_s. p(w). \forall p' \in C[p'(w) \rightarrow p \subseteq p']$$

The lexical entry for the propositional *bien* is specified in (40). Like *only*, it takes a proposition and a world as arguments and presupposes the truth of the prejacent, which is evidenced by the infelicity of (41) in the given context. What is asserted is that there is a true proposition in the set of *p*’s alternatives which is stronger than *p*.

$$(40) \llbracket \text{bien}_{prop} \rrbracket^C = \lambda p_{st}. \lambda w_s. p(w). \exists p' \in C[p'(w) \wedge p' \subseteq p]$$

- (41) Context: *A states he does not know whether Musa lives here. B asks...*

# amma muusa bien v-eexa-š v-u-i quzaḥ?

but Musa BIEN CL-live-CVB.SIM CL-AUX.PRES-Q here

Int.: ‘But, setting aside Musa, is anyone living here?’

# ‘Is only Musa living here?’

Under negation, the meaning becomes identical to that of *only*. For the required meaning to obtain, it has to be the case that *bien* is always outscoped by negation. This can be achieved via exhaustification. For example, let us see what happens if *bien* is taken to outscope negation in (42).

<sup>6</sup> One proposal along these lines has been made by Uegaki (2018) in order to uniformly capture the use of the Japanese particle *-ka* in questions, indefinites, and disjunctions. For now, it is unclear whether something similar could be said for *bien*.



- (42) muusa bien ca v-ea-na  
 Musa BIEN NEG CL-come-PERF  
 ‘Only Musa came.’

Assuming that the alternative propositions in *C* are {‘Musa did not come’, ‘Ali did not come’, ‘Zara did not come’}, exhaustification will result in unsatisfiable truth conditions: it is stated that there is a proposition stronger than ‘Musa did not come’, that there is no proposition stronger than ‘Ali did not come’ and no proposition stronger than ‘Zara did not come’ (43).

- (43)  $[\exists p.p(w) \wedge p \subseteq \text{‘Musa did not come’}] \wedge [\neg \exists p.p(w) \wedge p \subseteq \text{‘Ali did not come’}] \wedge [\neg \exists p.p(w) \wedge p \subseteq \text{‘Zara did not come’}]$

On the other hand, if negation outscopes *bien*, the correct truth conditions are obtained, stating that there is no true proposition stronger than ‘Musa came’ in the context (44).

- (44)  $[\neg \exists p.p(w) \wedge p \subseteq \text{‘Musa came’}] \wedge [\exists p.p(w) \wedge p \subseteq \text{‘Ali came’}] \wedge [\exists p.p(w) \wedge p \subseteq \text{‘Zara came’}]$

To summarize, the fact that *bien* can occur either with or without an overt quantifier is an issue for the existing approaches to NEG+exceptive constructions, which assume that the exceptive element contributes quantification itself. An additional issue is raised by the fact that *bien* can compose with elements of various semantic categories, which either makes it necessary to employ cross-categorial existential type-shifting, or to reject a monosemic treatment of the exceptive element altogether. One piece of evidence for the latter approach is the discrepancy between the interpretation of *bien* with and without an overt quantifier that arises in questions, which is elaborated on in the next section.

### 5. The puzzles posed by *bien* in questions

When *bien* is in the scope of sentential negation, the inferences that arise with and without an overt quantifier are identical, although (45a) and (45b) are most naturally translated with *only* and *but*, respectively. Both sentences imply that Musa came and that everyone other than Musa did not.

- (45) a. muusa bien ca v-ea-na  
 Musa BIEN NEG CL-come-PERF  
 ‘Only Musa came’  
 b. muusa bien čha ?a ca v-ea-na  
 M. BIEN one ADD NEG CL-come-PERF  
 ‘No one but Musa came.’

However, in questions, the interpretation of *bien* with and without an overt quantifier differs. In the former case (46), it is inquired whether anyone other than Musa came, and the ‘yes’ response implies that someone different from Musa did. By contrast, (47) questions whether it is true that no one different from Musa came, so the ‘yes’ response conveys that nobody but Musa came.

- (46) muusa bien cha ʔa v-ea-n-ii?  
 Musa BIEN one ADD CL-come-PERF-Q  
 ‘Did anyone besides Musa come?’ {<sup>OK</sup> Yes, Ali also came. }

- (47) muusa bien v-ea-n-ii?  
 Musa BIEN CL-come-PERF-Q  
 ‘Did only Musa come?’ {# Yes, Ali also came. }

The difference between the two interpretations can be understood in terms of *highlighting* (cf. Roelofsen & Farkas 2015). Uttering a question or a declarative sentence makes some semantic objects salient and available for subsequent anaphoric reference. For instance, if a polar question or a declarative is answered with *yes*, it conveys that Betty smokes, while replying with *no* conveys that she does not. In these cases, the highlighted proposition is ‘Betty smokes’.

- (48) *Does Betty smoke?/Betty smokes.*  
 a. *Yes.*  $\rightsquigarrow$  Betty smokes.  
 b. *No.*  $\rightsquigarrow$  Betty does not smoke.

Like in the cases discussed above, in (46), the highlighted content is the proposition *someone besides Musa came*. Assuming that a polar question denotes a set of the form  $\{p, \neg p\}$  (Hamblin 1973), (47) shows that when a *bien*-phrase occurs without an overt quantifier, the negative proposition becomes salient in the discourse instead (for simplicity, in (49), it is assumed that *bien* is monosemic).

- (49) Highlighted content in polar questions with *bien*:  
 a. (46):  $\{\exists x. x \neq \text{Musa} \ \& \ \text{came}(x), \neg \exists x. x \neq \text{Musa} \ \& \ \text{came}(x)\}$   
 b. (47):  $\{\exists x. x \neq \text{Musa} \ \& \ \text{came}(x), \neg \exists x. x \neq \text{Musa} \ \& \ \text{came}(x)\}$

This contrast suggests that the instances of *bien* with and without an overt quantifier may have some other underlying differences. The explanation for the highlighting pattern outlined above is left for future work.

Let us now turn to possible accounts for the distribution of *bien*. As has been shown in Section 2.2, *bien*-phrases are licensed in polar questions and are generally infelicitous in constituent questions. In what follows, I review some analyses of NPIs licensed in questions and see whether they capture *bien*’s distribution.

Firstly, some approaches (e.g., Nicolae 2013) reduce polar questions to restrictors of universal quantifiers, another environment where NPIs are known to be licensed. As we have seen, *bien*-phrases are not licensed in the restrictor of *every* and in conditional antecedents, thus, a unified treatment of these environments would yield incorrect predictions.

Next, Guerzoni & Sharvit (2007) propose that an NPI is licensed in a question only if the question involves sentential negation (either overt or covert) which outscopes the NPI. They start with the observation that an NPI is licensed in a *whether or not*-type alternative question when it follows *whether or not*, but not when it occurs in between *whether* and *or not*.

- (50) a. *Mary wondered whether or not her student had ever read Syntactic Structures.*  
 b. \**Mary wondered whether her student had ever read Syntactic Structures or not.*

They assume that the LF of a polar question actually corresponds to that of a *whether CP or not CP* alternative question, even when no disjunction or negation is overtly present. In (50a), the CP in the first disjunct is elided, and the NPI *ever* is licensed by negation in the second CP. The opposite happens in (50b), and, since the CP in the first disjunct contains no negation, the NPI is not licensed. In a polar question with no overt negation and disjunction, such as *Has Mary ever read Syntactic Structures?*, the assumed underlying structure is (51), with the NPI embedded in the negated clause and *or not* undergoing pragmatic omission.

- (51) [~~*Mary at some time read SS*~~] (or [not] [*Mary ever read SS*]).

However, Chechen alternative questions are syntactically different from polar questions, which makes a uniform analysis unsuitable for them. Unlike polar questions, alternative questions cannot include the question particle *-i(i)*; a question with two disjoined constituents with *-i(i)* is interpreted as a polar question (the relevant difference is marked by intonation in English, as indicated in the translations).

- (52) a. aħ            ħalxara ja šolgha heesap d-i-na?  
 2SG.ERG first    or second problem CL-do-PERF  
 ‘Did you solve the FIRSt or the SECond problem?’ {# – Yes }  
 b. aħ            ħalxara ja šolgha heesap d-i-n-ii?  
 2SG.ERG first    or second problem CL-do-PERF-Q  
 ‘Did you Solve the first or the second problem?’ {<sup>OK</sup> – Yes }

Another option would be to assume that *bien*-phrases are negative concord items (NCIs).<sup>7</sup> The idea that NCIs may be licensed in non-negative contexts, and, specifically, in polar questions, has been entertained with reference to languages like Turkish and Persian (Kamali & Matsumoto 2023; Gould & Alxatib 2024). However, this approach is unsuitable for the Chechen data. Firstly, unlike NCIs, *bien*-phrases need not be licensed locally. As (53) shows, an embedded *bien*-phrase can be licensed by matrix negation in a neg-raising context (with the whole sentence paraphraseable as ‘I do not think (anyone) but Zara came to class’).

- (53) [zaara **bien** urok-ie j-ea-na älla]    ca xieta suu-na  
 Zara BIEN class-ALL CL-come-PERF COMPL NEG think.PRES 1SG-DAT  
 ‘I think that only Zara came to class.’

Secondly, a signature characteristic of NCIs is that, unlike NPIs, they can occur as standalone fragment answers. Conversely, *bien*-phrases are not licensed in fragments with elided negation (54). Thus, it can be concluded that *bien*-phrases pattern with NPIs and not NCIs.

<sup>7</sup> I thank Hedde Zeijlstra for bringing up this specific analytical option.

- (54) a. – mila v-ea-ra?  
           who CL-come-WPST  
           ‘Who came?’
- b. \*– muusa bien  
           Musa BIEN  
           Int.: ‘Only Musa’

To conclude, it is yet unclear how to derive the distribution of an NPI that is only licensed by sentential negation and in polar questions. It is also unclear how to explain the highlighting pattern of questions with *bien*. This is left for future research.

## 6. Conclusion

This paper described the semantics and distribution of the Chechen particle *bien*. It has been shown that the existing analyses of similar constructions in other languages (von Fintel & Iatridou 2007; Sauerland & Yatsushiro 2023) do not fully capture its properties. Firstly, the exceptive element may occur either with or without an overt existential quantifier, suggesting that the quantifier is not introduced by *bien* itself, as would be expected on the existing approaches. I have suggested that *bien* is ambiguous between a propositional operator and an exceptive akin to *but* in English. This is evidenced by the fact that the two lexical items receive different interpretations in questions. Secondly, unlike its counterparts in French or Japanese, *bien* occurs not only in strong NPI licensing contexts but also in polar questions. This specific distributional pattern is not predicted by the existing approaches to NPIs.

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## Abbreviations

|       |                      |       |            |
|-------|----------------------|-------|------------|
| 1,2,3 | person               | INESS | inessive   |
| ADD   | additive             | LV    | light verb |
| ACC   | accusative           | LAT   | lative     |
| ALL   | allative             | NEG   | negation   |
| AUX   | auxiliary            | OBL   | oblique    |
| CL    | noun class agreement | PTCP  | participle |
| CMPR  | comparative          | PST   | past       |

|      |             |      |              |
|------|-------------|------|--------------|
| COND | conditional | PERF | perfect      |
| CVB  | converb     | PRES | present      |
| DAT  | dative      | SIM  | simultaneous |
| ERG  | ergative    | Q    | question     |
| FUT  | future      |      |              |
| IMP  | imperative  |      |              |

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# Functional heads as binders: The case of Eastern Armenian.

Nelli Marutyan

Eastern Armenian exhibits a three-way distinction in third person pronouns. The pronoun *NA* is particularly noteworthy due to its puzzling distribution: it is anti-subject, anti-wh, and anti-focus. The descriptive generalization is that *NA* is anti-spec vP and anti-spec-FocP. Building on Moulton (2009), I propose that this distribution can be accounted for if we think of Binding as a type of agreement mediated by functional heads.

## 1. Introduction

The observation that Binding Theory (Chomsky 1980, 1981) fails to account for a wide range of cross-linguistic data is not new (Reuland 2001, 2011; Reinhart & Reuland 1993; Reinhart 1983, 2000, among others). The core issue is that in this theory, anaphors and pronouns are treated as theoretical primitives that are mutually exclusive: they are not expected to occur in the same syntactic position. While this system works reasonably well for languages with a two-way distinction in third-person pronouns such as English, it becomes problematic for languages that exhibit a three-way distinction. Such languages typically have a pronominal form that can function both as an anaphor and as a pronoun; for example Dutch *zich* and Icelandic *sig* (Reuland 2001, 2011). These pronouns also typically have a pro-subject orientation. Eastern Armenian is another language with a three-way pronominal system, one member of which is particularly noteworthy for its anti-subject orientation:

- *ink<sup>h</sup>n iren* (literally: Self-NOM Self-ACC) - can be licensed only locally
- *ink<sup>h</sup>ə* (Accusative/Dative: *iren*) - can be licensed both locally and long-distance without C-command
- *na* - has a restricted distribution: it cannot co-refer with the subject (either in the same clause or in the matrix clause), with a wh-word, and with focused DPs

*Na* is what makes the Armenian system interesting, and the goal of this paper is to account for its distribution. The following data<sup>1</sup> shows that *NA* is anti-subject (1)-(2), anti-wh (4), and anti-focus (5):

- (1) Aram<sub>əi</sub> sirum e ir-en<sub>i/j/</sub>/ nr-an<sub>\*i/j</sub>  
 Aram love AUX INK<sup>h</sup><sub>ə</sub>-ACC.3.SG/ NA-ACC.3.SG  
 ‘Aram loves himself/him.’
- (2) Aram<sub>əi</sub>/[Aram-i<sub>j</sub> majr]<sub>k</sub> kartsum e vor Merin<sub>h</sub> sirum e ir-en<sub>i/j/k/h/n</sub>  
 Aram/[Aram-GEN mother] think AUX that Mary love AUX INK<sup>h</sup><sub>ə</sub>-ACC.3.SG  
 /nr-an<sub>\*i/j/\*k/\*h/n</sub>  
 /NA-ACC.3.SG  
 ‘Aram/Aram’s mother thinks that Mary loves him/her/herself.’
- (3) Aram-n<sub>i</sub> Ani-in<sub>j</sub> tvets ir<sub>i/j/k/</sub> nra<sub>\*i/j/k</sub> girkə  
 Aram-NOM Ani-DTV gave INK<sup>h</sup><sub>ə</sub>.GEN/ NA.GEN book.ACC  
 ‘Aram gave his/her book to Ani.’
- (4) Aram-ə<sub>i</sub> um<sub>j</sub> e tv-el ir<sub>i/j/k</sub> /nra<sub>\*i/\*j/k</sub> girkə  
 Aram-NOM.DEF whom AUX give-PRF INK<sup>h</sup><sub>ə</sub>.GEN/ NA.GEN book.ACC  
 ‘Who did Aram give his/her book?’
- (5) Aram-ə<sub>i</sub> Ani-in<sub>j</sub> e tv-el ir<sub>i/j/k/</sub> nra<sub>\*i/\*j/k</sub> girk-ə  
 Aram-NOM.DEF Ani-DTV AUX give-PRF INK<sup>h</sup><sub>ə</sub>.GEN/ NA.GEN book-ACC  
 ‘It is Ani that Aram gave her book’

We can observe from (1) and (2) that *NA* cannot co-refer with either the local or the matrix subject, whereas co-reference with *ink<sup>h</sup><sub>ə</sub>* is permitted. Example (3) shows that *NA* can refer to the object, but when that object is wh-moved, as in (4), co-reference is blocked. Finally, (5) demonstrates that *NA* cannot refer to a focused object.<sup>2</sup>

Based on the data cited above, the empirical generalization seems to be that *NA* cannot co-refer with any NP/DP at Spec-vP and Spec-CP. However, there is a good reason to believe that wh-words and Focused XPs do not land at Spec-CP in Armenian. I propose that Armenian has a low Focus position (in the so-called middle field), above vP. Wh-words and focused *XP* land in the specifier of this projection (see Horvath 2008, Kiss 1988 for similar proposal for Hungarian). Crucially, though, this functional head introduces a quantificational operator.

As it has been mentioned above, Binding Theory cannot account for the distribution of *NA*. *Principle B* can account for (1), but it has nothing to say about (2), (3), (4), and (5). I propose that the distribution of *NA* can be explained if we construe of binding as a type of agreement (let’s call it Agree for expository purposes), mediated by the functional head. Building on Moulton (2009), who suggests that the functional heads *v* (and possibly *C*) host binder indices, I propose that *v* has an unvalued [uR] feature that ‘looks’ for variables. Although in Armenian the focus and *wh* do not land at Spec-CP, as it has been mentioned above, the idea is that the functional head of the *Foc* projection can also host binder indices, very much like *C*.

Building primarily on Schwarz (2009) and Grosz & Patel-Grosz (2017), I propose that while both *ink<sup>h</sup><sub>ə</sub>* and *na* project a DP, they differ in the strength of their *D* heads: *ink<sup>h</sup><sub>ə</sub>* has a weak *D*

<sup>1</sup> The data reflects the grammatical judgments of 7 native speakers, including me.

<sup>2</sup> Auxiliary is a prosodic clitic in Armenian that gets cliticized to the focused elements and to WH-words.



head, entering the derivation with an unvalued index, whereas *NA* has a strong *D* head, entering with a valued index. Following Moulton (2009), I assume that pronominals are born with a DP projection and that indices are variables introduced on DPs. The probe searches its C-command domain, finds *NA* with a certain valued index. I propose a condition which bans the concurrence of the same index on a functional head and its specifier. *NA* cannot be bound by a DP at Spec-vP. In other words, it cannot be bound if the binder is in a feature-sharing relation with the functional head (Spec-head). This explains why *NA* can co-refer with the object and cannot co-refer with the subject: there is no index sharing between the functional head and the object.

## 2. Distribution of Armenian pronominals: the puzzle

Before proceeding with the distribution of *ink<sup>h</sup>* and *na*, to make the description of the Armenian pronominal system complete, I want to start by showing that the reflexive *ink<sup>h</sup>n iren* is a well-behaved *Principle A* pronominal:

- (6) Anin<sub>i</sub> kartsum e                      vor Aram<sub>j</sub> sirum e  
 Ani think AUX.3.PR that Aram love AUX.3.PR  
**ink<sup>h</sup>n ir-en**<sub>\*i/j</sub>  
 INK<sup>h</sup><sub>Θ</sub>.NOM.3.SG.-INK<sup>h</sup><sub>Θ</sub>-ACC.3.SG  
 'Ani thinks that Aram loves himself'

*ink<sup>h</sup>n ir-en* can co-refer only with the local subject *Aram*. The co-reference with the matrix subject is banned.

Both *ink<sup>h</sup>* and *na* can appear in subject position.

- (7) ink<sup>h</sup><sub>Θ</sub>/na                      tatron e                      gnatsel  
 INK<sup>h</sup><sub>Θ</sub>.3.SG/NA.3.SG theater AUX.3 go  
 'He/she went to the theater.'

The difference between *ink<sup>h</sup>* and *Na* is that the former refers to a salient discourse antecedent (in the sense of Schwarz 2009, i.e. a referent known to the speaker and hearer as part of background knowledge or that has come to be uniquely identifiable in the discourse). It is unusual to use *NA* if the antecedent is salient in this sense. *NA* can be used deictically<sup>3</sup>, meanwhile *ink<sup>h</sup>* cannot; e.g. *A woman entered the room. NA/\*ink<sup>h</sup><sub>Θ</sub> was wearing a blue dress.*

*ink<sup>h</sup>* can be licensed locally in the object position, but *NA* cannot:

- (8) Aram<sub>i</sub> sirum e                      ir-en<sub>i/j</sub>/                      nr-an<sub>\*i/j</sub>  
 Aram love AUX INK<sup>h</sup><sub>Θ</sub>-ACC.3.SG /NA-ACC.3.SG  
 'Aram loves himself/him'

As we can see from (1) repeated here as (8), *iren* (the Accusative of *ink<sup>h</sup><sub>Θ</sub>*) can refer to *Aram* or to a discourse antecedent. *nran* (the accusative of *NA*) cannot co-refer with *Aram*. It can only have a discourse antecedent.

The ability of *ink<sup>h</sup><sub>Θ</sub>* to occur without a c-commanding antecedent in (7), to be licensed by

<sup>3</sup> An additional piece of evidence that *na* is truly deictic comes from contrastive demonstrative contexts: *I do not want SA ('this'); I want NA ('that').*

a local c-commanding subject in (8), and its ability to corefer with the long-distance subject *Aram* in (2) (repeated below as (9) for convenience) show that it is both an anaphor and a pronoun. Binding Theory cannot account for this because anaphors and pronouns are theoretical primitives in that framework.

- (9) Aram<sub>i</sub>/[Aram-<sub>i</sub><sub>j</sub> majrə]<sub>k</sub> kartsum e vor Merin<sub>h</sub> sirum e **ir-en**<sub>i/j/k/h/n</sub>  
 Aram/[Aram-GEN mother] think AUX that Mary love AUX **INK**<sup>h</sup><sub>ə</sub>-ACC.3.SG  
 /**nr-an**<sub>\*i/j/\*k/\*h/n</sub>  
 /**NA**-ACC.3.SG  
 ‘Aram/Aram’s mother thinks that Mary loves him/her/herself.’

*Iren* in (9) can refer to the c-commanding *Aram*, to the non-c-commanding *Aram’s* (in *Aram’s mother*), to the c-commanding DP *Aram’s mother*, to *Mary*, and to a discourse antecedent.

*NA* in (9) cannot refer to the c-commanding *Aram* or *Aram’s mother*, but it can refer to the non-commanding *Aram’s* and to a discourse antecedent. *Principle B* cannot account for this distribution.

*NA* cannot co-refer with the matrix subject but it can co-refer with the matrix object:

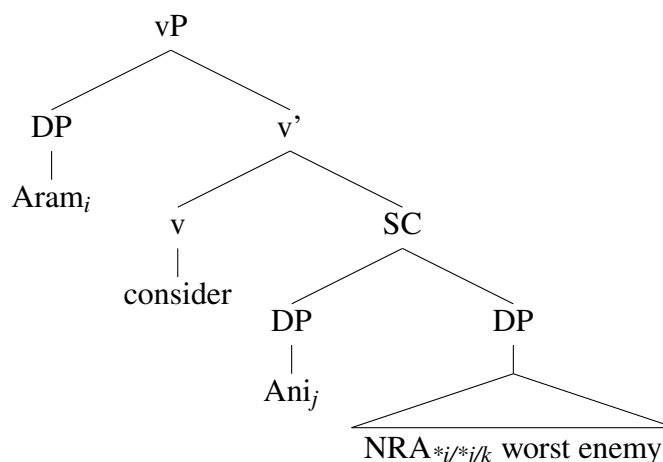
- (10) Aram-ə<sub>i</sub> hamozel e Ani.in<sub>j</sub> vor **na**<sub>\*i/j</sub> lqi  
 Aram.DEF.NOM persuade AUX3.PR Ani.ACC that **NA** leave.3.SUBJ.PR  
 yerkir-ə  
 country-DEF  
 ‘Aram has persuaded Ani to leave the country.’

In (10), *Na* cannot co-refer with the c-commanding subject *Aram* but it can refer to the c-commanding object *Ani*. Notably, the object is a more local c-commander than the subject. Thus, the distribution of *Na* cannot be just reduced to the absence of c-command. The following data ((11) to (23)) shows that the relevant generalization is that ***Na* cannot co-refer with a c-commanding NP/DP if the latter is in Spec-vP**.

- (11) Aram-n<sub>i</sub> hamarum e Ani-in<sub>j</sub> ir<sub>i/j/k</sub> nra<sub>\*i/\*j/k</sub> vatagujn tshnamin  
 Aram-NOM consider Aux.3.PR Ani-DTV INK<sub>ə</sub>.GEN /NA.GEN worst enemy  
 ‘Aram considers Ani his/her worst enemy’

In (11) *nra* cannot co-refer either with *Aram* which is in spec-vP (see (12) below) or with *Ani* which is in Spec of the Small Clause (vP).

(12)



(12) illustrates the structure of (11). Crucially, both *Aram* and *Ani* are in Spec-*vP*—a position which, I claim, does not permit co-reference with *NA*.

(13) presents additional evidence supporting the claim that Spec-*vP* is the relevant position. In this example, *na* cannot refer to *every worker*, since the coreferential *PRO* occupies Spec-*vP* and c-commands *NA*.

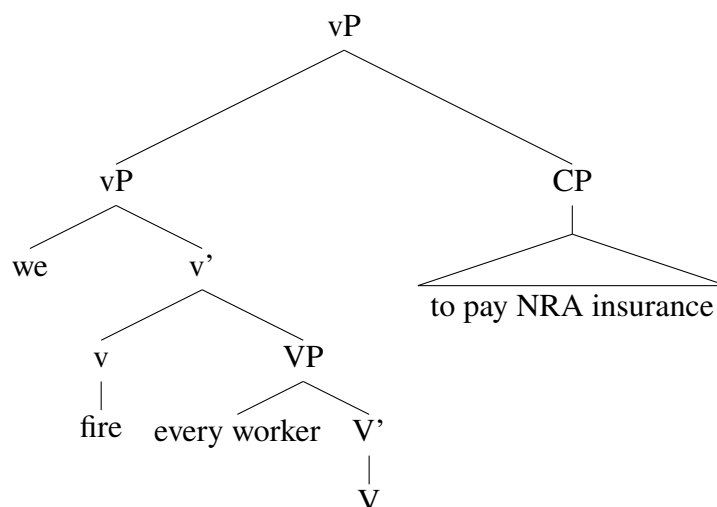
- (13) Menq<sub>i</sub> [amen afxatoyi]<sub>j</sub> uyarketsinq tun [PRO<sub>\*i/j</sub> **ir<sub>j</sub>/nra<sub>\*i/\*j/k</sub>** apahovagrut.jamb  
 we every worker sent home [PRO IR/NRA insurance.INST  
 apr.el.u]  
 live.INF.GEN]  
 ‘We sent every worker home to live on his insurance.’

In (14), by contrast, the controlled clause is attached higher, and *every worker*, being at the spec of big VP does not control *PRO*. Here *NA* can co-refer with *every worker* (see Reinhart (1983) on the corresponding English sentences).

- (14) Menq<sub>i</sub> stipvats einq ashkhatanq.its azatel [amen afxatoyi]<sub>j</sub> [PRO<sub>i</sub>  
 we obliged AUX.3.PL.PST work.ABL free [every worker] [PRO  
 ir<sub>\*i/j/k</sub>/nra<sub>\*i/\*j/k</sub> apahovagrutjuny vchar.el.u hamar]  
 IR/NRA insurance pay.INF.GEN for]  
 ‘We had to fire every worker in order to pay his insurance.’

The structure for (14):

(15)

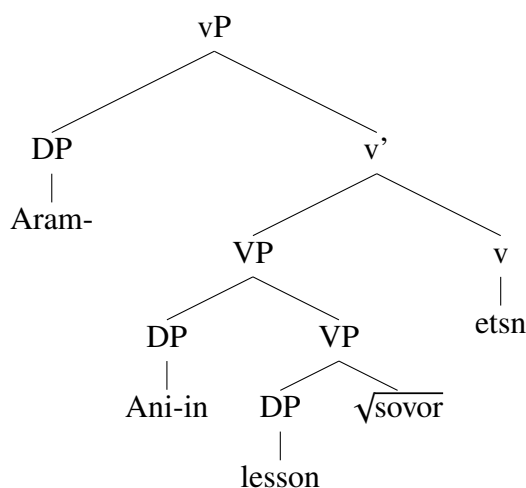


(15) illustrates that *every worker* does not c-command *PRO*, and therefore cannot control it, which makes coreference with *NA* possible.

Another piece of evidence showing that *NA* is indeed anti-Spec *vP* comes from causative constructions. Armenian has two types of causatives: a morphological causative and a periphrastic ones. The are structurally different. Morphological causatives are root selecting (Harley 2008) with the following structure:

- (16)    Aram-ə      Ani-in    das-ə      sovor-etsr-ets  
           Aram-NOM. Ani-DTV lesson-ACC learn-CAUS-AORIST-3.SG  
           ‘Aram taught Ani the lesson (Lit.: “Aram caused Ani learn the lesson”).’

(17)



(17) illustrates the structure of the morphological causative, which I analyze as a type of *vP*-shell, with the causee (*Ani* in this case) in Spec-VP (see Harley 2008 for a similar proposal on Japanese morphological causatives). That morphological causatives are indeed root-selecting in Armenian is supported by two observations: (i) No morphology can intervene between the causative morpheme and the root; and (ii) some morphological causatives can be used idiomatically. Marantz (1997, 1984) proposes that idiomatic interpretations arise only within the same *vP* as a result of the relationship of the verbal root with its internal argument. So, because nothing intervenes between the verbal root and *tsn*, idiomatization becomes possible.

This is not the case with *tal* constructions discussed below because there is an intervening maximal projection. The following table summarizes the idiomatic and non-idiomatic readings of some morphological causatives:

| Morphological  | Non-idiomatic                 | Idiomatic                     |
|----------------|-------------------------------|-------------------------------|
| qn-etsn-el     | ‘put to sleep’                | ‘put away/forget’             |
| negh-atsn-el   | ‘make something narrower’     | ‘make someone upset with you’ |
| tsakhk-atsn-el | ‘cause something to flourish’ | ‘exaggerate’                  |
| karmr-atsn-el  | ‘make red’                    | ‘blush’                       |

Table 1. Idiomatic and non-idiomatic readings of some morphological causatives

Adverbial scope tests also support the mono-eventive analysis of Armenian morphological causatives: manner adverbs do not give rise to scope ambiguities.

- (18)   Aram- $\emptyset$        yerekhaner-in   lur       senyak mts-tsr-ets.  
          Aram-NOM children-DTV silently room   enter-CAUS-AORIST.3.SG  
          ‘Aram silently (without talking) made the kids enter the room.’

In (18), the adverb *silently* attaches high in the structure, at the level of vP. It therefore has wide scope, describing the manner in which Aram *caused* the children to enter the room. Crucially, the adverb cannot modify the manner of the children’s entering itself.

With this structure in mind, let us now consider (19), which involves the variable *NA*.

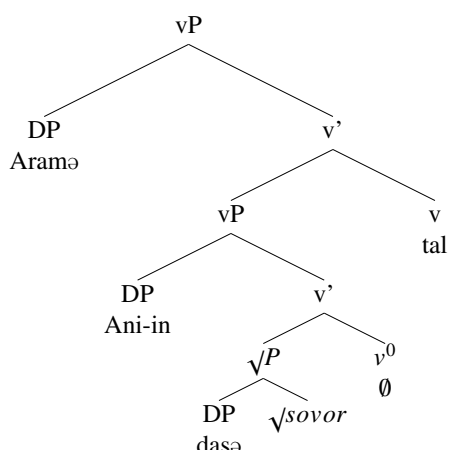
- (19)   Aram- $\emptyset_i$        Ani-in<sub>j</sub>   NRA<sub>\*i/j</sub>   das- $\emptyset$        sovor-etsr-ets  
          Aram-NOM. Ani-DTV NA.GEN lesson-ACC learn-CAUS-AORIST-3.SG  
          ‘Aram taught Ani her lesson.’

As (19) shows, coreference between *NA* and the subject (the causer, *Aram*) is still ruled out, whereas *NA* can refer to the causee (*Ani*). The key takeaway is that coreference with an NP/DP in Spec-vP is prohibited, but *NA* can be bound by an *XP* in Spec of the big VP.

Now let’s look at periphrastic causatives. Armenian periphrastic causatives are formed with the light verb *tal* (lit. ‘give’). Adverbial scope tests show that such constructions are bi-eventive. I suggest that they select for a vP, attaching to a root that has already been verbalized.

- (20)   Aram- $\emptyset_i$        Ani-in<sub>j</sub>   NRA<sub>\*i/\*j</sub>   das- $\emptyset$        sovor-el   tv-ets  
          Aram-NOM. Ani-DTV NA.GEN lesson-ACC learn-INF give-AORIST.3.SG  
          ‘Aram made Ani learn the lesson.’

(21)



(21) illustrates the structure of (20).

As mentioned above, adverbial scope tests support the conclusion that periphrastic causatives in Armenian are bi-eventive. Examples (22) and (23) illustrate that, depending on the structural position of the adverbial, it can take either wide or narrow scope. In (22), *silently* attaches high, modifying the causing event and thus describing the manner in which Aram caused the children to enter the room. In (23), by contrast, *silently* attaches lower, within the embedded vP, and describes the manner in which the children themselves entered the room.

- (22) Aram-ə      lur      yerekhaner-in    senyak mtn-el    tv-ets.  
 Aram-NOM. silently children-DTV room    enter-INF give-AORIST.3.SG  
 ‘Aram silently (without talking) made the kids enter the room’
- (23) Aram-ə      yerekhaner-in lur      senyak mtn-el    tv-ets.  
 Aram-NOM. children-DTV silently room    enter-INF give-AORIST.3.SG  
 ‘Aram made the kids enter the room silently (without kids talking)’

What is crucial for our purposes is that there are two verbalizing heads, and hence two distinct functional projections. Both the causer (*Aram*) and the causee (*Ani*) occupy Spec positions of *v*-headed projections. Importantly, *NA* cannot co-refer with either *Aram* or *Ani*.

### 2.1. NA as anti-Wh

As it has been briefly mentioned in the *Introduction*, *NA* cannot co-refer with *wh*-words. Below is more data illustrating this observation:

- (24) Aramn<sub>i</sub>      Ani-in<sub>j</sub>    nerkayatsr-el e      ir<sub>i/j/k</sub>      / nra<sub>\*i/j/k</sub>  
 Aram.NOM Ani-ACC present-PRF AUX.3.PR ink<sup>hə</sup>.GEN / NA.GEN  
 coleganer-in  
 colleague-DTV  
 ‘Aram presented Ani to her colleagues’

- (25) Aramn<sub>i</sub> um<sub>j</sub> e nerkayatsr-el ir<sub>i/j/k</sub>/ nra\*<sub>i/j/k</sub>  
 Aram.NOM who.ACC AUX.3.PR present-PRF ink<sup>h</sup><sub>ə</sub>.GEN /NA.GEN  
 coleganer-in  
 colleague-DTV  
 ‘Who did Aram present to her colleagues’

In (24), *NA* can co-refer with the object *Ani*. However, as we can see in (25), that co-reference is lost after the object is wh-moved. For the co-reference to become possible, *ink<sup>h</sup><sub>ə</sub>* should be used.

Before turning to the distribution of *NA*, a brief clarification of Armenian word order is necessary. In bitransitive clauses under neutral, unfocused prosody, the canonical order is Subject - Direct Object - Indirect Object:

- (26) Aram girk.ə tv.ets Ani-in/ir-en/nr-an  
 Aram.NOM book.ACC give.AORIST.3 Ani-DTV/self-Acc/NA-ACC  
 ‘Aram gave the book to Ani/to her’

However, Armenian exhibits strong *Principle C* effects: pronouns cannot precede their antecedents. Thus, when the direct object contains a pronominal, the word order is Subject–Indirect Object–Direct Object. (3), repeated here as (27), illustrates this:

- (27) Aramn<sub>i</sub> Ani-in<sub>j</sub> tvets ir<sub>i/j/k</sub> /nra\*<sub>i/j/k</sub> girkə  
 Aram.NOM Ani.DTV gave ink<sup>h</sup><sub>ə</sub>.GEN /NA.GEN book.ACC  
 ‘Aram gave his/her book to Ani’

With this in mind, one might argue that (27) represents a case of weak crossover. While it is true that local scrambling in Armenian can feed binding (and thus help avoid *Principle C* effects), (27) does not involve weak crossover. In this example, *Ani* C-commands the pronoun from its landing site, which is not a configuration typically associated with weak crossover. However, *NA* does in fact interact with weak crossover in interesting ways.

- (28) Um<sub>i</sub> e nra\*<sub>i</sub>/ir<sub>i</sub> majrə<sub>i</sub> iska<sub>p</sub>es sirum *t*  
 who.ACC AUX.3 *NRA/IR* mother really like  
 Intended ‘Who does his mother really like?’

(28) is a typical case of weak crossover, and it is striking that the crossover effect disappears when *NA* is replaced with *IR*. This should not be possible under any standard account of weak crossover effects. It also challenges the common view that A’-movement should not affect binding, since binding is generally assumed to be possible only from an A-position. This immediately raises the question: what is the landing site of *wh*-words in Armenian?

In fact, there is good evidence that *wh*-words do not land at Spec-CP in Armenian. We can observe from the data cited above (4), (25), that *wh*-words follow the subject. This is an indication that *wh*-words do not land very high. It is important to note, however, that Armenian is a scrambling language with a relatively flexible word order, and *wh*-words can also precede the subject without any disenable change in semantics of the sentence. However, the 7 native speakers, including me that contributed to the data collection, consider Subject > *wh*-word order more natural.

That being said, the flexibility of Armenian word order makes the *Subject-wh-word* order an

unreliable diagnostic. However, other factors, considered together, support the conclusion that *wh*-words do not move very high in the structure. One such factor is that *wh*-movement is clause-bound in finite Indicative clauses in Armenian. This is probably because it never makes to the edge of the clause.

- (29) Aram-n asats vor Anin girk gən-ets  
 Aram-NOM say.AORIST.3.sg that Ani book buy-AORIST  
 ‘Aram said Ani bought a book’

- (30) \*Inch Aram-n as-ats vor Anin gən-ets  
 what Aram-NOM say-AORIST that Ani buy-AORIST  
 ‘Intended: What did Aram say that Ani bought?’

(30) is ungrammatical. Instead, Armenian either scope marks the matrix clause and does local *wh*-movement in the embedded clause or only the latter:

- (31) Aram-n inch e as-el Anin inch e gən-el  
 Aram-NOM what AUX say-PRF Ani what AUX buy-PRF  
 ‘What did Aram say that Ani bought?’

- (32) Aram-n as-el e vor Anin inch e gən-el  
 Aram-NOM say say-PRF AUX that Ani what AUX buy-PRF  
 ‘What did Aram say that Ani bought?’

(31) illustrates matrix scope marking combined with *wh*-movement in the embedded clause, while (32) involves *wh*-movement in the embedded clause only. The two are semantically equivalent. This pattern is typical of languages that lack long-distance *wh*-movement (see Bondarenko 2024 on Georgian among others). Notably, cross-clausal *wh*-movement is permitted in Armenian in subjunctive and control clauses - a pattern that is also commonly attested in other languages reported to lack long-distance *wh*-movement (see Coon & Alvarez 2025 for Ch’ol; Bondarenko 2024 for Georgian; Egressy 2023 for Hungarian a.m.o).

Additional evidence that *wh*-words do not move to Spec-CP in Armenian comes from embedded questions: *wh*-elements follow the complementizer in such contexts, indicating that they cannot occupy the spec position of the projection headed by *C*.

- (33) Anin hetaqrqvets **TE** ur e Aramə gnum  
 Ani wondered **COMP** where AUX.3.PR Aram go  
 ‘Ani wondered where Aram was going’
- (34) Anin hetaqrqvets **TE** Aramn ur e gnum  
 Ani wondered **COMP** Aram where AUX.3.PR go  
 ‘Ani wondered where Aram was going’
- (35) \*Anin hetaqrqvets ur e **TE** Aramə gnum  
 Ani wondered where AUX.3.PR **COMP** Aram go  
 ‘Intended: Ani wondered where Aram was going’

Both (33) and (34) are acceptable, but crucially, (35) is ungrammatical.

All the arguments presented above indicate that *Wh*-words are low in Armenian. I will propose



in the next section that Armenian has a low Foc position in the so-called middle field - above vP. Both *wh*-words and focused elements land at the specifier of this position.

## 2.2. *NA as anti-focus*

As it has been briefly mentioned above, *NA* cannot co-refer with any focused element.

- (36) Aram-*n<sub>i</sub>* Ani-in-*j* e nerkayatsr-el **ir**<sub>*i/j/k*</sub>/ **nra**<sub>*\*i/\*j/k*</sub> coleganer-in  
 Aram-NOM Ani-ACC AUX present-PRF ink<sup>h</sup><sub>θ</sub>.GEN/ NA.GEN colleague-DTV  
 ‘It is Ani who Aram presented to her colleagues’
- (37) Ani-in-*j* e Aram-*ə<sub>i</sub>* nerkayatsr-el **ir**<sub>*i/j/k*</sub>/ **nra**<sub>*\*i/\*j/k*</sub> coleganer-in  
 Ani-ACC AUX Aram-NOM.DEF present-PRF ink<sup>h</sup><sub>θ</sub>.GEN/ NA.GEN colleague-DTV  
 ‘It is Ani who Aram presented to her colleagues’

As with *wh*-words, focused objects in Armenian can appear either before or after the subject. However, native speakers judge the word order in (36) where the subject precedes the focused object—as more natural.

The coreference of *NA* with a focused subject is also banned.

- (38) Aram-*n<sub>i</sub>* e Ani-in-*j* nerkayatsr-el **ir**<sub>*i/j/k*</sub> /**nra**<sub>*\*i/j/k*</sub> coleganer-in  
 Aram-NOM AUX Ani-ACC present-PRF ink<sup>h</sup><sub>θ</sub>.GEN/ NA.GEN colleague-DTV  
 ‘It is Aram who presented Ani to her colleagues.’

As we can observe in (38), the coreference of *NA* with the focused subject is not allowed, but reference to the object becomes possible.

Another important piece of the puzzle regarding the distribution of *NA* is that, interestingly, it can co-refer with the topic.

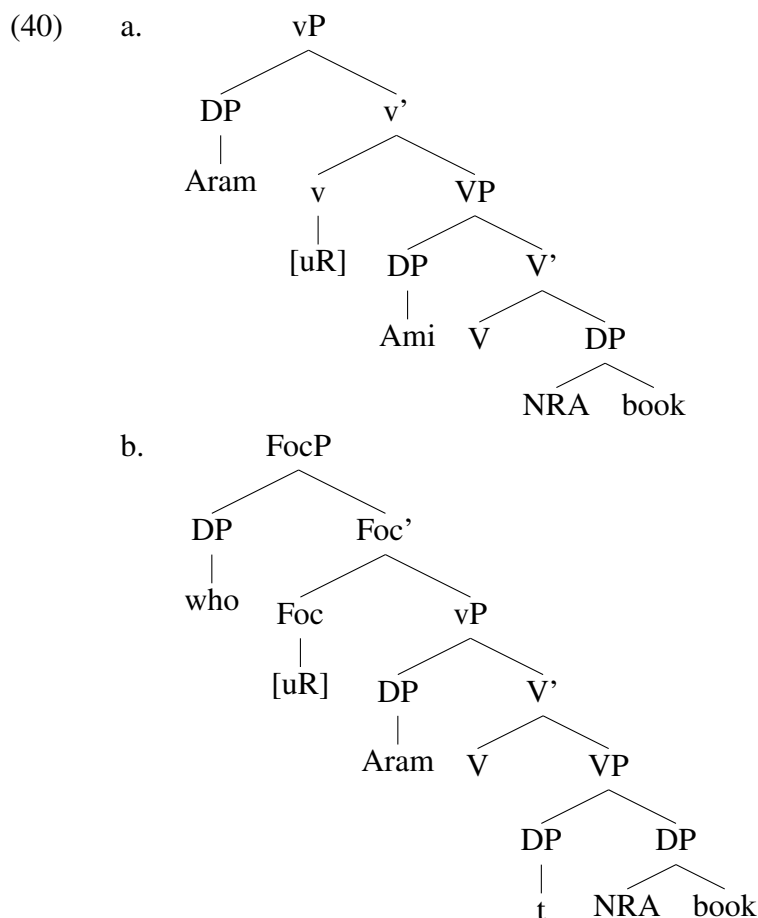
- (39) Meri-in-*i*, pro-<sub>*i*</sub>/ir-<sub>*i*</sub>/nra-<sub>*i*</sub> ənkernerə nran-<sub>*i*</sub> khelatsi en  
 Meri-ACC<sub>*i*</sub> pro/ink<sub>θ</sub>.GEN<sub>*i*</sub>/NA.GEN<sub>*i*</sub> friends NA.ACC smart AUX.3.PR  
 hamarum  
 consider  
 ‘Mary, her friends consider her smart.’

As (39) illustrates, co-reference between *NA* and the topic (*Mary*) is allowed.

In the next section, I present an agreement-based account of the distributional patterns of *NA* described above.

## 3. Proposal: functional heads as binders

Before starting with a proposal on how binding works in Armenian, I would like to address the position of *wh*-words and focus. As it has already been mentioned above, I propose that Armenian has a low focus, above vP, and both *wh*-words and focused elements are moved to the specifier position of this projection.



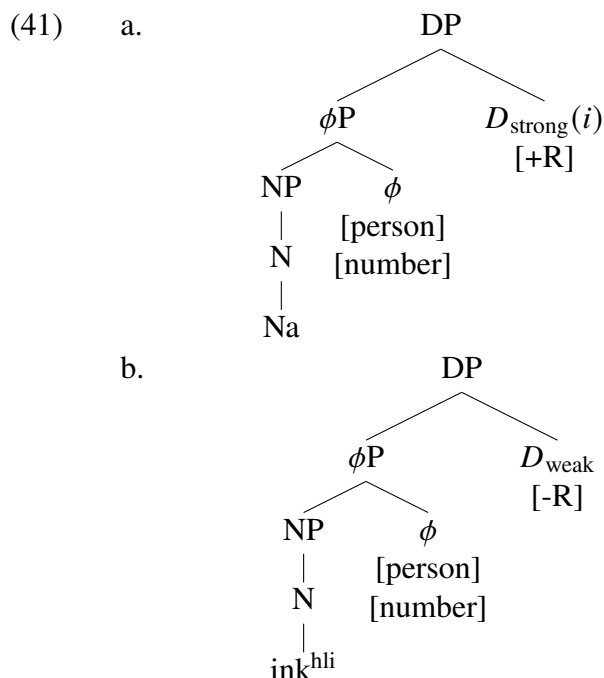
(40a.) represents the structure of *Aram gave Ani NRA book*, while (40b) illustrates the structure for the *wh*-moved object *Ani*. There is good reason to believe (based on the nuclear stress assignment patterns observed in the language (Marutyan 2025a, forthcoming)) that definite subjects obligatorily move out of the *vP*. Thus, the word order subject- *wh*-word - verb observed in (4) results from the subject moving to a position higher than the *wh*-element, specifically to Spec,TP. The word order *wh*-word-subject-verb is derived by subsequent scrambling of the *wh*-word over the subject. This is the only possibility given that definite subjects have to move out of *vP* and they end up at a position higher than FocP.

As noted above, focused elements also target the specifier of FocP. In (36), for example, *Ani* has moved to Spec-FocP, and the subject has moved to Spec-TP (see Marutyan 2025a, forthcoming, for details on argument movement in Eastern Armenian). In (37), where the focused object precedes the subject, I propose that parallel to *wh*-phrases, the focused XP undergoes scrambling over the subject, yielding the surface order Focus-subject-verb.

As mentioned above, in Armenian, A'-movement appears to affect binding. However, the spec of FocP is presumably not an A' position. This is why the movement to this position creates a new binding configuration (but see Boškovič 2024, among others, for discussion of the significant challenges involved in defining the A/A' distinction). I will return shortly to the mechanics of binding, but before doing so, it is necessary to outline the feature composition I assume for *inkə* and *NA*.

Building primarily on Schwarz (2009), Grosz & Patel-Grosz (2017), I propose the following

structures for *ink* and *NA*:



Pronominals are born with a DP projection. Indices are variables born on DPs (Moulton 2009). The DP can enter the derivation either with a valued index (a deictic pronoun)<sup>4</sup>, as *Na* or without a valued index (non-deictic pronoun), as *Ink<sup>h</sup><sub>∅</sub>*.

I follow Moulton (2009) (see also Kratzer 2009 for a similar idea), who proposes that functional heads host binder indices. Moulton suggests that functional heads capable of hosting such indices include at least *v* and *C*. I propose that, for Eastern Armenian, the relevant heads are *v* and *Foc*. The idea is that these indices are bundled into heads that introduce operators capable of ranging over variables.

The question is how to connect the binder, i.e., the functional head with the bindee, i.e., the DP. The most straightforward approach is to treat this connection as a form of agreement. I propose that the functional head carries an unvalued *R*-feature (*uR*) that probes its c-command domain for variables. Binding can then be understood as a type of agreement (let's call it Agree for expository purposes), mediated by the functional head. The probe locates an occurrence of *NA* with a valued index, copies the *[+R]* feature with its index, and shares it with the *NP/DP* in its specifier position. The functional head enforces disjoint reference: if the indices are identical, the derivation crashes; if they are not, the DP is transferred to the interface and interpreted as a free variable. If not, it is transferred to the interface and interpreted as a free variable. If the probe finds *Ink<sup>h</sup><sub>∅</sub>*, it basically results in vacuous copying of the *-R* feature because the latter does not have a valued index. As a result, it is translated as a free variable at the interface. However, this raises an important question. After *Ink<sup>h</sup><sub>∅</sub>* is translated as a free variable at the interface,

<sup>4</sup> Hicks (2009), addressing the concerns that postulating indices in syntax violates The inclusiveness Principle, emphasizes that by saying that the pronominal enters the derivation with a specified index, he does not claim that they are stored in the lexicon with specified indices. They just have a [VAR] feature, which can take different values; basically these are just '[...instructions to be converted into an integer upon lexical selection]'. If we translate this into the framework adopted in this paper, we can think of indices as values on the [R] feature.

it can basically be pragmatically bound by a discourse antecedent, including the subject. Why, then, can't *NA* do the same? This concern can be addressed by Reuland's (2001) argument. He builds on the insights presented in Reinhart (1983) who suggests that if a computational system blocks a certain interpretation, we cannot try 'to go around it' and get the same interpretation by other mechanisms.

The binder-bindee relations explored so far are more or less local in a sense that they do not cross clause boundaries. However, we saw in (9), *NA* cannot co-refer with the matrix subject as well. (42) illustrates the structure of (9):

(42)

It is easy to observe that the proposed agreement-based approach to binding encounters a challenge when attempting to account for the fact that *Na* cannot co-refer with the matrix subject. This type of agreement is essentially a PIC violation since the probe would be targeting a goal located inside a closed phase. However, it is important to note that the agreement mechanism proposed in this paper does not involve any manipulation of the goal itself. In other words, we are not tempering with the goal. On the bases of such considerations (among others) Fox & Pesetsky (2005), Bošković (2007) state that agreement does not need to be phase-bound (See Also Reuland & Zubkov 2022 for an analysis of long-distance binding that crosses phase boundaries).

The final piece of the puzzle concerns the observation that *Na* can, in fact, co-refer with topics (see (39)). I suggest, building on insights from Moulton (2009), that topics are base-generated. I further assume that topics are not quantificational. Indeed, topics have been argued not to involve quantification even in English (Lasnik & Stowell (1991), Rizzi (1997)). Though Lasnik & Stowell (1991) propose a movement analysis of Topics, they note that for most speakers such constructions either do not trigger weak crossover effects or only do so marginally:

(43) John, who his mother really likes *t*

Lasnik & Stowell (1991) call cases like (43) a *weakest crossover* and note that none of the existing accounts of weak crossover can explain the absence of such effects in topicalized constructions. At the same time Lasnik & Stowell (1991) argue convincingly that focus and wh-movement are in fact quantificational. They propose that this quantification is an LF phenomenon.

Returning to the Armenian data, although the landing sites of wh-words and focus, as well as the possibility of repairing constructions that otherwise appear to trigger weak crossover effects with *Na*, support the conclusion that Armenian lacks weak crossover, the parallel between functional heads that introduce quantification and those that do not remains striking and raises several questions. For instance: What differentiates wh-movement in Armenian from that in English? The low Focus position in Armenian clearly introduces quantificational effects - so how is this operator distinct from the one found in English? For instance, Bošković (2002) proposes that wh-words in languages that permit multiple wh-fronting (Armenian is such a language) are different from wh-words in English. He argues that wh-words in this languages are true indeterminates; they do not carry inherent quantificational force. They require licensing and this is what drives their movement.<sup>5</sup> In other words, wh-movement in languages such as

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<sup>5</sup> According to Bošković 2002, in multiple wh-fronting languages all wh-words have to move. None of them can stay in-situ. This is true about Armenian too.

Armenian is argued not to be driven by an unvalued *Q*-feature on the probe (Bošković 2002). Bošković refers to such languages as focus-fronting rather than wh-movement languages. This raises further questions. For instance, in Armenian, focused elements also land in Spec-FocP - the same position where wh-elements surface. Does this mean that focus movement in Armenian is also distinct from its English counterpart? And if so, in what way? Wh-movement and focus movement in Armenian are discussed in detail in Marutyan (2025a, 2025b, forthcoming). What is relevant for our purposes here is that both wh-movement and focus movement in Armenian affect binding. The *Foc* head introduces an operator that can bind a variable. The precise nature of this quantificational operator remains to be determined.

In summary, I propose that *NA* cannot be bound by a DP at Spec-vP or Spec FocP. In other words, it cannot be bound if the binder is in a feature-sharing relation with the functional head (Spec-head)<sup>6</sup>. This accounts for the asymmetry: *Na* can co-refer with the object but not with the subject, because there is no index sharing between the functional head and the object.

#### 4. Crosslinguistic observations

The proposal presented above accounts for the distribution of third person pronouns in Armenian. Nevertheless, unless one assumes that Armenian is somehow typologically unique, the proposal should be, at least in part, extendable to other languages. I argue that Armenian is not exceptional in this regard: all languages manipulate similar bundles of features, but not all have dedicated vocabulary items for all feature bundles. The goal of this section is not to provide a comprehensive account of binding mechanisms cross-linguistically, but rather to situate Armenian within the broader typological framework.

Note that Reuland (2001, 2011), Kratzer (2009) among others argue that pronominals enter the derivation as feature bundles: underspecified or fully specified. I suggest that this is not the characteristic feature of some languages: it should be true about all the languages. In other words, languages manipulate a binary set of fully specified ( $\phi$ -Complete, [+R]) or underspecified ( $\phi$ -Complete, [-R]) or  $\phi$ -Incomplete, [-R]) pronominals (leaving Reflexivity aside for a moment), the difference being that some languages have dedicated morphological forms to represent different feature sets (like *ink<sup>h</sup>ə* vs *na* in Armenian) and some do not. This does not imply, however, that pronominals are underspecified in identical ways across languages. In other words, they do not spell out identical feature bundles. The Armenian *ink<sup>h</sup>ə*, for example, has a weak *D* head ([-R]), but it is otherwise  $\phi$ -complete (it has number and person). Russian *svoj*, for instance, lacks person; the Polish *swoj* lacks person and number; Dutch *zich* lacks number and gender, and all of them, I propose are [-R] (referentially deficient).

Reuland (2001, 2011) argues that binding requires a specificity mismatch between binder and bindee; specifically, the bindee needs to be underspecified. Importantly, Reuland (2001,

<sup>6</sup> A reviewer suggests testing the prediction using derived passive subjects. Indeed, *na* cannot co-refer with a derived passive subject, but I propose that this does not show that Spec-TP is itself a binding position. Building on Moulton (2009) and Kratzer (2009), I propose that only *v* and *C* host binder indices; Chomsky (2008) likewise argues that probes are in the phase heads *v* and *C*. Following Legate (2003), we have independent support for the claim that movement in passives is successive-cyclic and that passive vPs have edges (i.e. Spec-vP) that must be traversed. Thus, by the time the DP reaches Spec-TP, the relevant feature sharing with *v* has already occurred (or failed), so binding with *na* is already blocked at the *vP* phase. Movement beyond Spec-vP to Spec-TP serves case licensing and satisfies the EPP but doesn't restore the conditions needed for binding.

2011) makes this claim only regarding local phase-bound binding, which he argues is syntactic, involving syntactic agreement that allows the underspecified variable to acquire missing features from the binder to become interpretable at the interface. However, as we have seen above, the binding by functional head, including the cross-clausal binding, also requires that the goal be referentially deficient. The bindee must possess enough inherent features to avoid complete dependence on the binder yet remain referentially deficient (lacking a valued index) to permit coreference. I do not claim that local reflexive binding and binding by functional heads are identical processes. Indeed, there is ample evidence that only the former is purely syntactic. Nevertheless, the observation that cross-phasal and cross-clausal binding mediated by functional heads (as proposed here) is also sensitive to pronominal feature composition suggests that it may not be entirely dissociated from syntax, contrary to suggestions by Reuland (2001, 2011), Kratzer (2009), among others.

There is a good evidence that vP is a phase in Armenian. If it can also be established that FocP constitutes a phase, it becomes plausible to argue that long-distance binding in Armenian is an interface phenomenon mediated by phase edges. In other words, Binding relations are evaluated at the interface. This conclusion will be in line with Chomsky & Lasnik (1993) that 'Binding Theory is on the edge of the C-I interface.'

Returning to the feature composition of pronominals, I suggest languages manipulate a binary set of fully specified and underspecified pronominals, specifically realizing the following features:

Returning to the feature composition of pronominals, I suggest languages manipulate a binary set of fully specified and underspecified pronominals, specifically realizing the following features:

(44)  $\phi$ -complete, [-R],[Reflexive]—himself/herself

|                        |   |     |
|------------------------|---|-----|
| $\phi$ -complete, [-R] | } | he  |
| $\phi$ -complete, [+R] |   |     |
| $\phi$ -complete, [-R] | } | him |
| $\phi$ -complete, [+R] |   |     |
| $\phi$ -complete, [-R] | } | his |
| $\phi$ -complete, [+R] |   |     |

$\phi$ -incomplete, [-R] should be unattested (Please see Déchaine & Wiltschko (2002) for the relevant discussion).

I propose that English *he*, *him*, and *his* are ambiguous between being an anaphor<sup>7</sup> and being pronominal, but none of these forms is inherently Reflexive. In some contexts English inserts *he/she* for the feature bundles [-R], [-complete] and *himself/herself* in other contexts (for instance logophoric among others). *he/she* also gets inserted for [+R], [-complete]. (45) shows that English *his* is also ambiguous between pronominal and anaphoric interpretations:

(45) Robert likes his house and Nicholas likes it too.

a. Robert  $\lambda x$  (x likes **nra** house) and Nicholas  $\lambda x$  (x likes **nra** house)

<sup>7</sup> I use the term *anaphor* to refer to a variable that can be bound, excluding reflexives.

- b. Robert  $\lambda x$  (x likes **ir** house) and Nicholas  $\lambda x$  (x likes **ir** house)

The pronoun in (a) is interpreted referentially (a= someone from the discourse). (b) the pronoun has a bound interpretation (*Robert* in the first conjunct and *Nicholas* in the second one. Armenian, in this context, uses two different vocabulary items: (*ir* and *nra*):

- (46) Robert likes his house and Nicholas likes it too  
 a. Robert  $\lambda x$  (x likes **nra** house) and Nicholas x (x likes **nra** house)  
 b. Robert  $\lambda x$  (x likes **ir** house) and Nicholas x (x likes **ir** house)

What about *him*? Is it ambiguous too? Why is (47) ungrammatical?:

- (47) \*John<sub>i</sub> likes him<sub>i</sub>

I suggest that (47) is ungrammatical because although *him* is ambiguous between being anaphoric and pronominal, it is anti-reflexive (or [-reflexive]). English has a 'dedicated' vocabulary item *himself* reserved for the feature set  $\phi$ -complete, -R, + Reflexive).

We can also think about this in terms of 'competition': there is a 'more suitable' alternative to *him* in (47); namely, *himself*, and when we try to insert *him*, it results in ungrammaticality. There is not such alternative for *his* in (45) (*his own* is not a pronominal alternative: it just uses another linguistic tool to express anaphoricity). English does not have dedicated vocabulary items for anaphors and pronouns.

The following example supports the claim that *him/her* is ambiguous between being an anaphor and a pronoun, but it cannot function as a reflexive:

- (48) John<sub>i</sub> thinks that Robert<sub>j</sub> likes him<sub>i/\*j</sub>.

*him* can be anaphorically bound by *John* in the matrix clause, but it cannot be reflexively bound by *Robert*.

Thus, I suggest that Armenian manipulates among anaphors, pronouns and reflexives, and has a dedicated vocabulary item for all three of them. While English manipulates the same feature bundles, but does not have a dedicated vocabulary item for anaphors and pronouns: the same morphological form gets inserted both for pronouns and anaphors.

## 5. Conclusion

Armenian pronominals have a DP projection. Some *D* heads are strong with a valued index, and some are weak (no valued index). I have shown that the Armenian pronoun *NA* is anti-subject, anti-wh and anti-focus. I have proposed that Armenian has a low focus position and that wh-words and focused elements land at the specifier of this projection. Based on this, I proposed that the descriptive generalization capturing the distribution of *NA* is that *NA* is anti spec-vP and anti Spec-FocP. I proposed that this distribution can be accounted for if we think of binding as a type of agreement mediated by the functional heads *v* and *Foc*.

I also argued that the landing site of wh-words in Armenian is not an A'-position, which is why it affects binding relations. In other words, it appears that Armenian does not exhibit weak crossover effects. Nevertheless, the data discussed above indicate that the functional head of

the Focus projection is quantificational in nature, introducing a quantificational operator. The question that remains to be explored is the precise nature of this operator and how Armenian wh- and focus-movement differ from their counterparts in English.

Finally, I have proposed that languages generally manipulate a binary set of underspecified and fully specified pronominals, but differ in the availability of dedicated exponents to realize these feature combinations. I further suggested that all pronominals participating in anaphoric binding are referentially deficient.

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