

Relatives and there-insertion

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This paper offers an explanation for why unexpected things happen when relatives relativise into *there*-insertion contexts. Unlike restrictive relatives, such relatives only allow determiners that are universal or definite (e.g., *{Every, *a} lion there is eats meat.*), they can't stack (e.g., **The sailor there was on the boat there had been on the island died.*), and while they allow *that* or the empty relativiser, they disallow *wh*-relativisers (e.g., *The men {that, Ø, *who} there were on this island are dead by now.*).

1. Introduction

A number of researchers (e.g., Carlson 1977, Safir 1982, Heim 1987, Grosu & Landman 1998) have observed that unexpected things happen when relatives relativise into *there*-insertion contexts. Unlike restrictive relatives, such relatives only allow determiners that are universal or definite. Hence the contrast between the ordinary relatives of (1a) and (2a), and the ungrammatical versions of (1b) and (2b).

- (1) a. John has stolen {everything, something, {the, a} watch} that was in Mary's bag.
b. John has stolen {everything, *something, {the, *a} watch} there was in Mary's bag.
- (2) a. They outlined {the, some, four, most, many} differences that are in their various positions.
b. They outlined {the, *some, *four, *most, *many} differences there are in their various positions.

In addition, as (3b) and (4b) show, such relatives, while allowing *that* or the empty relativiser, disallow the *wh*-relativisers *who* and *which*. In contrast, the restrictive relatives (3a) and (4a) can take the full range of relativisers.

- (3) a. The men {that, Ø, who} Palinurus sailed with are dead by now.
b. The men {that, Ø, *who} there were on this island are dead by now.

- (4) a. The light {that, \emptyset , which} is/shown in this picture is unlikely to disturb anyone.
 b. The light {that, \emptyset , *which} there is in this picture is unlikely to disturb anyone.

Also, relatives that relativise into *there*-insertion contexts can't stack (e.g., (5b)), unlike restrictive relatives (e.g., (5a)). Relatives are stacked when two or more are associated with the same head in a non-conjoined manner.

- (5) a. The sailor that was on the boat that had been on the island died.
 b. *The sailor there was on the boat there had been on the island died.

The aim of this paper is to provide an explanation for the data in (1)-(5). I will proceed as follows. In section 2, I introduce the semantics used throughout the paper. Section 3 looks at *there*-insertion contexts and gives an analysis of the (in)definiteness effect. Section 4 gives an explanation for a number of interpretation facts from the full range of relative clause-like constructions. Section 5 combines the findings of sections 3 and 4 to account for the data of this introduction. In section 6, additional evidence for the proposed analysis is presented. In section 7, I conclude.

2. The interpretation process

With a dynamic view of interpretation (e.g., Groenendijk & Stokhof 1991), words are typically actions that read some input, perform a simple transformation, and write some output. To make this idea concrete, consider how it might apply to (6).

- (6) There is someone. He is walking in the park.

Assume the first sentence translates as an existential quantifier. This adds a new object to its input (provided there is someone in the domain, that is; otherwise the sentence is false), which I'll take to be a sequence of objects from the domain. The resulting output is precisely the kind of input needed to interpret the second sentence, that is, if *he* is associated with the newly introduced object. The second sentence then tests for whether the newly introduced object is *walking in the park*. If the test succeeds, its input is passed on as its output. This process might be pictured as follows, using < for "takes as input" and > for "gives as output":

- (7) $\exists \langle [c_1, \dots, c_n] \rangle [c_1, \dots, c_n, c_{n+1}]. W(n+1) \langle [c_1, \dots, c_n, c_{n+1}] \rangle [c_1, \dots, c_n, c_{n+1}].$

In addition to the existential quantifier and simple predicate tests, a dynamic semantics has available a third type of operation: the ability to quantify over inputs and outputs. In what follows, I'll call operators that do this *control*

operators. The propositional connectives are typical examples of control operators.

2.1. Smart DQMLE

In this section I introduce the semantics used throughout the remainder of the paper. This is a smart dynamic quantified modal logic with exhaustification (henceforth, *DQMLE*). It is based on van Eijck's (1998) *Incremental Dynamics* system (see also Dekker's (1994) system of *Predicate Logic with Anaphora*). The logic is 'smart' because it builds controls on the context into the syntax of its formulas. The logic doesn't use variables, but instead uses term indices to indicate the distance of an argument place to its binding quantifier, counting from the outside in. Locations that indices are linked to can come from the input context (a sequence of objects from the domain), which has size n in the formula (n, ϕ) .

DEFINITION 2.1.1. The primitive non-logical vocabulary of *DQMLE* is a set RC of relation constants: P_1^n, P_2^n, \dots ($n \geq 1$). I'll use capitalised relation names like P, Q, \dots as typical members of RC . In addition to this non-logical vocabulary, I'll use the following logical vocabulary:

- [1] The set \mathbb{N}^+ of positive natural numbers;
- [2] The control operators $;$, \neg , T and E , the quantifier \exists , and \top .

DEFINITION 2.1.2. The set of *DQMLE* formulas, L , is the smallest set containing:

- [1] (n, \top) whenever $n \in \mathbb{N}$ (the set of natural numbers);
- [2] $(n, \exists ; \phi)$ provided $(n+1, \phi) \in L$;
- [3] $(n, P^m(v_1, \dots, v_m) ; \phi)$ provided $P^m \in RC$, $v_1, \dots, v_m \in \mathbb{N}^+$, $\sup(\{v_1, \dots, v_m\}) \geq n$ and $(n, \phi) \in L$;
- [4] $(n, (\neg\phi) ; \psi)$ provided $(n, \phi) \in L$ and $(n, \psi) \in L$;
- [5] $(n, (T\phi) ; \psi)$ provided $v \in \mathbb{N}^+$, $(n, \phi) \in L$ and $(n + e(\phi), \psi) \in L$;
- [6] $(n, (E_X\phi) ; \psi)$ provided $X \subseteq \mathbb{N}^+$, $(n, \phi) \in L$ and $(n + e(\phi), \psi) \in L$.

If X is a non-empty finite set of indices from \mathbb{N}^+ , $\sup(X)$ gives the maximum, 0 otherwise.

The presentation of syntax is not yet complete, since T and E require the calculation of the 'existential depth' of a formula. Notation for this is $e(\phi)$. Intuitively, the existential depth of (n, ϕ) calculates the number of positions by which the input sequence has grown after the semantic processing of ϕ . For example, the existential depth of $(n, \exists ; \top)$ is 1, for any n . If $(n, \phi) \in L$, the existential depth of ϕ is given by:

DEFINITION 2.1.3. Existential depth:

$$\begin{aligned}
 e(\top) &:= 0 \\
 e(\exists ; \phi) &:= 1 + e(\phi) \\
 e(P(v_1, \dots, v_m) ; \phi) &:= e(\phi) \\
 e((\neg\phi) ; \psi) &:= e(\psi) \\
 e((T, \phi) ; \psi) &:= e(\phi) + e(\psi) \\
 e((E_X\phi) ; \psi) &:= e(\phi) + e(\psi)
 \end{aligned}$$

This completes the presentation of syntax. Every formula has the form $(n, \phi_1 ; \dots ; \phi_k ; T)$, with $k > 0$. If $k > 0$ we will write $(n, \phi_1 ; \dots ; \phi_k ; T)$ as $(n, \phi_1 ; \dots ; \phi_k)$. To ease reading, I'll omit unnecessary parentheses whenever possible. For example, I'll write the formula $(3, (R(2,3)))$ as $3, R(2,3)$, etc. Also, I'll usually write $\exists ; \phi$ as $\exists\phi$. Thus L contains such formulas as in (8). However, (9) is not a well-formed formula because $e(\neg\exists P(1)) = 0$ and $e(\exists) = 1$, so that 2 is not less than or equal to $0 + 0 + 1$.

- (8) a. $0, \exists\exists$.
 b. $4, P(2,4)$.
 c. $2, \exists\exists G(3,4,2)$.
 d. $0, \neg\exists P(1) ; \exists Q(1)$.

- (9) $*0, \neg\exists P(1) ; \exists Q(2)$

I now turn to the semantic definition of satisfaction for *DQMLE*. This takes the form: $[[n, \phi]]^{M,w} < \sigma > \tau$. (n, ϕ) is an L-formula. M is a quantified modal logic model with constant domain (see e.g., Fitting & Mendelsohn 1998). w is a world from the set of worlds in M . A world assigns to each predicate symbol with arity n an n -arity relation on D (the domain of M). σ is an input (a.k.a. the anaphoric context). τ is an output. Inputs and outputs $\{\sigma, \tau, \theta, \zeta, \dots\}$ are finite sequences of elements from D (D^*). Upon meeting an existential quantifier, an input gets extended with a single value $o \in D$. Notation for this is $\sigma^\wedge o$. I'll use $\sigma[n]$ for the n -th element of σ and $l(\sigma)$ for the length of σ . $\text{diffsim}_X(\sigma, \tau)$ is used to say that σ, τ differ and that they differ at most in their n -th elements, where $n \in X$.

DEFINITION 2.1.4. A model M for the non-logical vocabulary RC is any quadruple $\langle W, D, R, V \rangle$ satisfying the following conditions:

- [1] W is a non-empty set of worlds,
- [2] D is a non-empty domain of (plural) objects,
- [3] R is a binary accessibility relation on W , i.e., $R \subseteq W \times W$,
- [4] V is a valuation function where if $P^n \in RC$, $V(P^n) \in \{g \mid g : W \rightarrow \wp(D^n)\}$.

DEFINITION 2.1.5. The denotation of term v with respect to finite sequence σ is defined as follows: $d_\sigma(v) := \sigma[v]$ if $v \leq l(\sigma)$, undefined otherwise.

DEFINITION 2.1.6. The input output relations σ, τ satisfy L-formula (n, ϕ) with respect to world w (in symbols: $[[n, \phi]]^{M,w} < \sigma > \tau$) as follows:

- [1] $[[n, T]]^{M,w} < \sigma > \tau$ iff $\sigma = \tau$;
- [2] $[[n, \exists; \phi]]^{M,w} < \sigma > \tau$ iff $l(\sigma) = n$ & $\exists o \in D([[n+1, \phi]]^{M,w} < \sigma^\wedge o > \tau)$;
- [3] $[[n, P(v_1, \dots, v_m); \phi]]^{M,w} < \sigma > \tau$ iff $l(\sigma) = n$ &
 $\langle d_\sigma(v_1), \dots, d_\sigma(v_m) \rangle \in [V(P)](w)$ & $[[n, \phi]]^{M,w} < \sigma > \tau$;
- [4] $[[n, (\neg\phi); \psi]]^{M,w} < \sigma > \tau$ iff $l(\sigma) = n$ & $\neg\exists \theta \in D^*([[n, \phi]]^{M,w} < \sigma > \theta)$ &
 $[[n, \psi]]^{M,w} < \sigma > \tau$;
- [5] $[[n, (T_v\phi); \psi]]^{M,w} < \sigma > \tau$ iff $l(\sigma) = n$ & $\exists \theta \in D^{e(\theta)}(1 \leq v-n \leq l(\theta)$ &
 $[[n, \phi]]^{M,w} < \sigma > \tau^\wedge \theta$ & $[[n+e(\phi), \psi]]^{M,w} < \sigma^\wedge \theta > \tau)$;
- [6] $[[n, (E_X\phi); \psi]]^{M,w} < \sigma > \tau$ iff $l(\sigma) = n$ & $\exists \theta \in D^*([[n, \phi]]^{M,w} < \sigma > \theta)$ &
 $\neg\exists \zeta \in D^*(diffsim_X(\sigma, \theta) \& [[n, \phi]]^{M,w} < \sigma > \zeta \& \forall w' \in W(Rww') \&$
 $[[n, \phi]]^{M,w'} < \sigma > \zeta \Rightarrow [[n, \phi]]^{M,w'} < \sigma > \theta))$ & $[[n+e(\phi), \psi]]^{M,w} < \theta > \tau)$.

DEFINITION 2.1.7.

$diffsim_X(\sigma, \tau)$ iff $l(\sigma) = l(\tau) = n$ & $\exists v \in X(\sigma[v] \neq \tau[v])$ & $\forall m \in \mathbb{N}^+(m \leq n \&$
 $\neg\exists v \in X(m = v)) \rightarrow \sigma[m] = \tau[m]$.

3. There-insertion

There-insertion contexts have the form in (10). The postverbal DP is called the “associate”.

(10) There verb DP (XP).

3.1. Agreement facts

As the data in (11) and (12) shows, the verb has to agree with the associate.

- (11) a. There $[F_i\text{-is/*are}]$ $[F_i\text{-a book}]$ on the table.
 b. There $[F_i\text{-are/*is}]$ $[F_i\text{-some books}]$ on the table.
- (12) a. There $[F_i\text{-is/*are}]$ likely to be $[F_i\text{-a book}]$ on the table.
 b. There $[F_i\text{-are/*is}]$ likely to be $[F_i\text{-some books}]$ on the table.

While *there* satisfies the EPP (T’s need for a specifier), it fails to satisfy the requirement that T check off its number features (and possibly others) (see e.g., Chomsky 1995). Consequently, the features must move to T from somewhere inside TP. The associate provides the necessary features, giving rise to a relation between the associate, T and *there be*.

3.2. *The associate must be an indefinite*

With data like (13), Milsark (1977), Heim (1987) and others, note that the associate must be an indefinite.

(13) There is {a man, *the man, *everyone, *Jim, *he/him} at the door.

Data from bare plurals accords with this observation. While (14a) allows both generic ('Books generally are out of stock') and existential ('Some books are out of stock') readings, (14b) has only the existential reading.

(14) a. Books are out of stock.
b. There are books out of stock.

This also rules out the possibility of the associate being a trace, which, for example, predicts the impossibility of a reading for (15) where the associate *someone* outscopes *thinks* (see e.g., Williams 1984) and predicts that indefinites extracted from the associate position will necessarily undergo scope reconstruction (see e.g., Cresti 1995). This latter prediction is borne out in (16).

(15) John thinks that there is someone in the house.

(16) How many people do you need there to be at the meeting?
a. *For what n : there are n people x such that you need x to be at the meeting.
b. For what n : you need there to be n people at the meeting.

3.3. *T for there-insertion contexts*

The existential control operator T_v defined in section 2.1 introduces a new context sequence θ that has the length of the existential depth of the formula ϕ over which it scopes, and contains the location $v-n$. It appends θ to its input σ , and requires this to be the output of the ϕ -transition when σ is given as input.

I'll suppose that *there* is T_v , and that feature movement from the associate sets the value of v . This gives, for example, (11a), which has the LF (17), the L-formula (18), using B for *book* and O for *on the table*.

(17) n , $\text{There}_{n+1} [F_{n+1}\text{-is}] [F_{n+1}\text{-a book}]$ on the table.

(18) n , $T_{n+1}(\exists ; B(n+1) ; O(n+1))$.

It follows from the semantics of T_v that (18) is interpretable, since the existential quantifier brings about a change in the input that agrees with the addition to the input that T_{n+1} must bring about. If, however, (11a) had encoded either L-formula in (19), then it would have been ill-formed. This is because in the formulas of (19), T_v forces a change to the input that the formula in its

scope isn't able to match. The same reasoning captures the data in (13)-(16).

- (19) a. $\# n, \exists ; B(n+1) ; T_{n+1}O(n+1)$.
 b. $\# n, B(i) ; T_iO(i)$ (where $i \leq n$).

3.4. Schemata for there-insertion sentences

To sum up the findings of this section, the interpretation of T_v in *there*-insertion sentences, while licensing structures of the form (20a), will rule out structures of the form (20b).

- (20) a. $n, T_{n+1}(\dots \exists \dots)$. (e.g., *There is someone on the life-raft.*)
 b. $\# n, T_{n+1}(\dots)$. (e.g., **There is everyone/Mary/she on the life raft.*)

4. Relative clauses

4.1. Free relatives

Free relatives have overtly realised relative clause internal heads (see e.g., Grosu 1996). They always return contextually restricted exhaustive values (see e.g., Zeevat 1994, Butler 2001). We say that a value is exhaustive if a stronger value can't be found. A value is stronger than value v if it necessarily entails v . For example, the free relative in (21a) returns a maximum value, since this will be the strongest value (suppose the maximum true value is £5,000, then this will necessarily entail all other true values: £4,000, £400, £4, etc.), and the free relative in (21b) returns a minimum value, since this will be the strongest value (suppose the minimum true value is £5,000, then this will necessarily entail all other true values: £6,000, £60,000, £600,000, etc.).

- (21) a. Mary has seen what Barbara can spend.
 b. Mary has seen what Barbara can live on.

4.2. E for relatives

I'll suppose that the exhaustification operator E_X is the topmost part of every CP-projection, and that *wh*-movement's *raison d'être* is to raise phrases to [spec, CP] to place their indices in X .

$E_X\phi$, as defined in section 2.1, works by insuring that there is no output ζ that is different from θ with respect to an n -th element, where $n \in X$, and stronger than θ . An output ξ will only be stronger than θ if it is a different output and every accessible world that supports ϕ with input σ and output ξ also supports ϕ with input σ and output θ . If no output ξ can be found, then θ must be exhaustive with respect to the contents of X . Taking σ to be the input and θ to be the output of a transition, note that the only source for variation between σ and θ will be from extensions to σ brought about by occurrences of

existential quantifiers. Also, note that E_X 's presence in a formula will have no truth-conditional effect if all indices in X happen to be greater than $l(\theta)$. As a consequence, any real application of E_X will be in situations where σ and θ differ and there are indices n in X such that $l(\sigma) < n \leq l(\theta)$.

To trigger a truth-conditional effect from E , we will assume that *what* introduces an existential quantifier. So, (21b), having the LF (22a), encodes the interpretable L-formula (22b), using B for *Barbara can live on* and M for *Mary has seen*. In (22b), the existential quantifier that introduces sequence location $n+1$ falls under the scope of an E that has registered its index. This forces an exhaustive value for $n+1$ with respect to the predicate context B .

- (22) a. n , Mary has seen $[_{CP} E_{\{n+1\}}$ what Barbara can live on $n+1]$.
 b. n , $E_{\{n+1\}} \exists B(n+1) ; M(n+1)$.

Notably, (22b) shares the same interpretation as the quantified modal logic formula (23), which, given the intuitive interpretation of B (*Barbara can live on*) is equivalent to (24), which returns the minimum value that Barbara can live on.

$$(23) \exists x(B(x) \wedge \neg \exists y(y \neq x \wedge B(y) \wedge \Box(B(y) \rightarrow B(x))) \wedge M(x)).$$

$$(24) M(\min(\lambda y . B(y))).$$

4.3. Comparatives

To be interpreted, comparatives need, in addition to an external head, a *than*-clause internal head. This latter head must return an exhaustive value. This follows immediately from having CP encode E , giving, for example, (25a), which has the LF (25b) with internal head \exists -things, the L-formula (25c), using M for *John was saying about Mary*, Y for *John was saying about you* and N for *nastiness*.

- (25) a. John said nastier things about Mary than he did about you.
 b. n , John said nastier things about Mary than $[_{CP} E_{\{n+1\}}$ \exists -things he did say $n+1$ about you].
 c. n , $\exists ; M(n+1) ; E_{\{n+2\}} \exists Y(n+2) ; N(n+1) > N(n+2)$.

In (25c) the internal head falls under the influence of E , making (25c), given the usual interpretation of Y (*John was saying about you*) equivalent to (26), in which the *than*-clause returns the maximum *nastiness that John said about you* (see e.g., von Stechow 1984).

$$(26) \exists x(M(x) \wedge N(x) > \max(\lambda y . \exists z(Y(z) \wedge N(z) = y))).$$

4.4. Non-restrictives

Non-restrictives require *wh*-relativisers (see e.g., (27a)). These are essentially anaphoric pronouns. This gives (27a) the LF-structure (27b) which encodes the L-formula (27c), using *H* for *has just arrived* and *M* for *you wanted to meet*. Notably, in (27c), *E* is left without anything to influence. As a consequence, with the one-place input sequence [*john*], (27c) translates into the predicate logic formula (27d).

- (27) a. John, {who, *that, *∅} you wanted to meet, has just arrived.
 b. 1, John has just arrived. 1, [_{CP} $E_{\{n+1\}}$ $n+1$. you wanted to meet $n+1$].
 c. 1, $H(1) <[john] > [john]$. 1, $E_{\{1\}}M(1) <[john] > [john]$.
 d. $H(john) \wedge M(john)$.

That *E* in (27c) has no truth-conditional effect is welcome. If it had, then it would have entailed that you wanted to meet only John, which is not an entailment of (27a).

4.5 Ordinary restrictives

Ordinary restrictives optionally take *wh*-relativisers (recall (3a) and (4a)). These act as abstraction operators. This gives (28a) the LF-structure (28b) which directly encodes the L-formula (28c). As was the case with non-restrictives, this leaves *E* without anything to influence. As a consequence, (28c) will translate into the predicate logic formula (28d), using *M* for *wanted to meet* and *A* for *has just arrived*.

- (28) a. Someone who you wanted to meet has just arrived.
 b. n , [Someone [_{CP} $E_{\{n+1\}}$ λx . you wanted to meet x]] has just arrived.
 c. n , \exists ; $E_{\{n+1\}}M(n+1)$; $A(n+1)$.
 d. $\exists x(M(x) \wedge A(x))$.

That *E* in (28c) has no truth conditional effect is again welcome. If it had, then it would have entailed that you wanted to meet only the *someone that has just arrived*, which is not an entailment of (28a).

4.6. Schemata for relatives

To sum up the findings of this section, when the head of a relative clause contains an existential quantifier, we get the following possible schemata:

- (29) a. n , ... $E_{\{n+1\}}(\dots \exists \dots)$... where the head is relative clause internal
 b. n , ... $\exists \dots E_{\{n+1\}}(\dots)$... where the head is relative clause external

If (29a) holds, the head falls under the influence of an E_X that has registered

its index, forcing the location it introduces to take an exhaustive reading with respect to the contents of the material under E_X 's scope. If (29b) holds, the head lies outside of E_X 's influence, allowing it to take a non-exhaustive reading. Notably, in (29b), E_X carries out its usual role of requiring its output to necessarily entail all other possible outputs with respect to the contents of X (here $n+1$). It's just that in (29b), for E_X , there is no newly introduced value $n+1$ to direct.

5. Relatives that relativise into there-insertion contexts

The previous section gave an analysis for relatives and section 3 gave an analysis for *there*-insertion contexts. Together, these analyses predict what happens when *there*-insertion contexts are relativised into.

5.1. The restriction on determiners explained

Since the head of the relative clause provides, when relativising into a *there*-insertion context, the associate, T will rule out structures (30b,c,d). In (30b), the head doesn't involve an existential quantifier. In (30c,d), the head is outside T 's scope. Notably, (30a), the only interpretable formula in (30), has T_{n+1} requiring that the existential quantifier adds the location $n+1$ to the input sequence, which E will thereafter force to take an exhaustive interpretation.

- (30) a. $n, \dots E_{\{n+1\}}(\dots T_{n+1}(\dots \exists \dots) \dots) \dots$
 b. $\# n, \dots E_{\{i\}}(\dots T_i(\dots) \dots) \dots$ (where $i \leq n$)
 c. $\# n, \dots E_{\{n+1\}}(\dots \exists \dots T_{n+1}(\dots) \dots) \dots$
 d. $\# n, \dots \exists \dots E_{\{n+1\}}(\dots T_{n+1}(\dots) \dots) \dots$

This buys us a solution to the puzzle of the restriction on determiners in (1b) and (2b). Suppose relative clauses are adjoined to NP (see e.g., Partee 1973, and contra a raising analysis e.g., Vergnaud 1974). This forces external determiners to remain external. But if the relative clause is to be interpretable, T will require an internal head that is an indefinite. This non-overt internal head will fix the denotation of the relative clause, so that an external determiner can only support in kind the fixed denotation. Since E will make the denotation of any internal head exhaustive, the only external determiners acceptable will be those that continue to guarantee the same interpretation, e.g., definites and universals, ruling out indefinites and cardinals.

As an example, this gives (31a) the LF in (31b), which encodes the L-formula (31c), using J for *John has stolen* and B for *was in Mary's bag*.

- (31) a. John has stolen everything there was in Mary's bag.
 b. $n, \text{John has stolen } [\text{everything } [{}_{CP} E_{\{n+1\}} n+1 \text{ there}_{n+1} [F_{n+1}\text{-was}] [F_{n+1}\text{-}\exists] \text{ in Mary's bag}]].$
 c. $n, E_{\{n+1\}} T_{n+1} \exists B(n+1) ; J(n+1).$

Notably, in (31c), the semantic contribution of *everything* is lost. The role of *everything* is rather to lend support to the process of interpreting (31c), which, given the usual interpretation of *B* (*was in Mary's bag*), is equivalent to (32).

(32) $\forall x(B(x) \rightarrow J(x))$.

5.2. The inability to stack explained

Relatives are stacked when two or more are associated with the same head in a non-conjoined manner. Stacking is only possible if the head is outside its relative clause, and so free to join the relatives in a stack via set-intersection. Having external heads, ordinary restrictives can stack (e.g., (5a)). Since relatives that relativise into *there*-insertion contexts must have internal heads, they can't stack (e.g., (5b)).

5.3. The restriction on relativisers explained

Who and *which* in ordinary restrictives (e.g., (3a), (4a)) have to be abstraction operators (see e.g., Partee 1973). Suppose they can only be abstraction operators. Their exclusion from (3b) and (4b) follows, since they would be taking up the structural slot needed by the non-overt indefinite head that licenses the *there*-insertion construction.

6. Two additional facts

6.1. The associate as a relative clause relativising into a *there*-insertion context

The idea that the semantic contribution of *everything* in (31a) is in effect lost at LF is strengthened by the observation that it is possible to have as the associate of a *there*-insertion context a relative clause that relativises into a *there*-insertion context. We might expect this to introduce conflict: while the *there*-insertion context of which the relative is the associate will require an indefinite, the relative itself will require an exhaustive determiner like *every* or *the*, as (33) confirms.

(33) There will be {everyone, the people, *four people} that there should be at the party.

As (34b/c) shows, conflict is averted under the current analysis, since when the relative clause relativises into a *there*-insertion context, there is a non-overt indefinite internal head to take over the semantic contribution of the external determiner. This gives both instances of *there* exactly what they need: an indefinite associate that will change the input to match the extensions to the input they bring about.

- (34) a. There will be everyone that there should be at the party.
 b. n , There _{$n+1$} will [F _{$n+1$} -be] [~~everyone~~-[CP E _{$n+1$} $n+1$ that there _{$n+1$} should [F _{$n+1$} -be] [F _{$n+1$} - \exists] at the party]] at the party.
 c. n , T _{$n+1$} (E _{$n+1$} T _{$n+1$} \exists SAP($n+1$) ; AP($n+1$)).

6.2. Coordinating relatives

Grosu (1994) notes that, while the coordinate restrictive relatives in (35a) may be construed as purporting to identify a single set of boys all of whom both sang and danced, the coordinate clauses in (35b) do not purport to identify the same set of people, and (35c) does not carry the implication that John bought and Mary sold the same thing(s).

- (35) a. The boys who sang and who danced...
 b. The people that there were at Bill's party and that there had been at Mary's party...
 c. What(ever) John bought and what(ever) Mary sold...

This further confirms the idea that *there*-insertion contexts pattern with free relatives by taking internal indefinite heads, giving the LF structures in (36), respectively.

- (36) a. n , The boys [[CP E _{$n+1$} λx . x sang] and [CP E _{$n+2$} λx . x danced]] ...
 b. n , The people-[[CP E _{$n+1$} $n+1$ that there were [\exists people] at Bill's party] and [CP E _{$n+2$} $n+2$ that there had been [\exists people] at Mary's party]] ...
 c. n , [[CP E _{$n+1$} What John bought $n+1$] and [[CP E _{$n+2$} what Mary sold $n+2$]] ...

7. Conclusion

In this paper I've argued that relatives that relativise into *there*-insertion contexts have a non-overt internal indefinite head, that *there* is not semantically vacuous, rather it's the existential control operator *T*, that every CP encodes an exhaustification operator *E*, and that *wh*-movement and feature movement have a semantic function. In the case of *wh*-movement, it tells *E* what it should control. Feature movement is used likewise for telling *T* what it should control. Placed together, these components give a mechanism that feeds off the observation that the location of a relative clause's head can force an exhaustive reading. This accounts for why relativising into a *there*-insertion context leads to the exclusion of determiners that fail to match the exhaustive reading, why such relatives disallow *wh*-relativisers and why they can't stack. Notably, these results come from a single syntax/semantics setup that fits all types of relatives, including ordinary restrictives, comparatives, free relatives and non-restrictives. The next step is to see how this picture fits with other *wh*-

constructions e.g., questions, clefts, correlatives etc., and to see the implications of the analysis cross-linguistically.

References

- Butler, A. (2001). Sentences with exhaustification. Bunt, H., I. van der Sluis & E. Thijsse (eds.), *Proceedings of 4th International Workshop on Computational Semantics*, Computational Linguistics and AI Group, Tilburg, pp. 21-34.
- Carlson, G. (1977). Amount relatives. *Language* 53, pp. 520-542.
- Dekker, P. (1994). Predicate logic with anaphora (seven inch version). Santelmann, L. & M. Harvey (eds.), *Proceedings of SALT IV*, DMLL Publications, Cornell University, pp. 79-95.
- Chomsky, N. (1995). *The minimalist program*. MIT Press, Cambridge, MA.
- Cresti, D. (1995). Extraction and reconstruction. *Natural Language Semantics* 3, pp. 79-122.
- van Eijck, J. (1998). *Incremental dynamics*. INS-R9811 & LP-1998-08, CWI & ILLC, University of Amsterdam.
- Fitting, M. & R. Mendelsohn (1998). *First-order modal logic*. Kluwer, Dordrecht.
- Groenendijk, J. & M. Stokhof (1991). Dynamic predicate logic. *Linguistics and Philosophy* 14, pp. 39-100.
- Grosu, A. (1994). *Three studies in locality and case*. Routledge, London.
- Grosu, A. (1996). The proper analysis of "Missing-P" free relative constructions. *Linguistic Inquiry* 27, pp. 257-293.
- Grosu, A & F. Landman (1998). Strange relatives of the third kind. *Natural Language Semantics* 6, pp. 125-170.
- Heim, I. (1987). Where does the definiteness restriction apply? Evidence from the definiteness of variables. Reuland E. & A. ter Meulen (eds.), *The representation of (in)definiteness*, MIT Press, Cambridge, MA, pp. 21-42.
- Milsark, G. (1977). Toward an explanation of certain peculiarities of the existential construction in English. *Linguistic Analysis* 3, pp. 1-29.
- Partee, B. (1973). Some transformational extensions of Montague Grammar. *Journal of Philosophical Logic* 2, pp. 509-534.
- Safir, K. (1982). *Syntactic chains and the definiteness effect*. Diss, MIT, Cambridge, MA.
- von Stechow, A. (1984). Comparing semantic theories of comparison. *Journal of Semantics* 3, pp. 1-77.
- Vergnaud, J.-R. (1974). *French relative clauses*. Diss, MIT, Cambridge, MA.
- Williams, E. (1984). There-insertion. *Linguistic Inquiry* 15, pp. 131-153.
- Zeevat, H. (1994). Applying an exhaustivity operator in update semantics. Kamp, H. (ed.), *Ellipsis, tense, and questions*, DYANA-deliverable, ILLC, Amsterdam, pp. 233-269.

Quantifier scope in English and Korean

Young-Sik Choi

Quantifier scope interaction in English and Korean shows that only a principal filter quantifier can have inverse scope over the other quantifier in a structurally higher position iff the principal filter quantifier c-commands a member of the chain headed by the other quantifier. The difference in the availability of the inverse scope in transitive construction between the two languages is attributed to the availability of the object raising, by which the object can c-command a member of the chain headed by the subject.

1. Introduction

Our research in English and Korean shows that only certain types of quantifiers (QP, henceforth) can induce inverse scope over the other quantifier, which is in a structurally higher position. These quantifiers include a universal quantifier, proper names such as *John and Mary* and a demonstrative such as *these two men*. These quantifiers can be characterized as a principal filter in terms of semantics.¹ The universal quantifier in (1b) in Korean, which is a typical principal filter, however, cannot take inverse scope as opposed to the English counterpart in (1a), which seems to be an immediate challenge to our initial observation that principal filter quantifiers can take inverse scope.

- (1) a. Someone loves everyone. (English)
b. Nwukwun-ka motwun salam-ul coahanta (Korean)
someone-NOM everyone-ACC loves
'Someone loves everyone.'

Facing this, one seems to have a couple of options. One is to maintain that the difference is due to the cross-linguistic lexical variation of the universal

¹ A quantifier (GQ) is a principal filter iff there is a set of individuals A such that A is not necessarily empty and for any set of individuals X, $X \in \text{GQ}$ iff $A \subseteq X$. (see Szabolcsi 1997) The abbreviations we use in the glosses are TOP-topic, NOM-nominative case, POSS-possessive case, DAT-dative case, DAT-accusative case and CL-classifier.

quantifier so that it cannot have inverse scope in Korean. This option is not quite plausible, since the direct object universal quantifier in (2) cannot have inverse scope over the indirect object QP in both languages.

- (2) a. John assigned someone every problem. (Aoun and Li 1993:12)
 b. John-i nwukwunka-ekey motwun mwuncey-lul necuessta.
 J-NOM someone-DAT every problem-ACC assigned
 ‘John assigned someone every problem.’

Another option one may adopt for (1) is language-specific constraints such as S structure restructuring (Huang 1982:220) and LF filter (Hoji 1985:262), assuming quantifier raising (May 1977, 1985). The core idea of Huang (1982) and Hoji (1985) is that scope is basically determined by the surface word order in languages like Japanese and Chinese, while this is not the case in English. The surface word order determination of scope in (2), however, suggests that Huang’s (1982) and Hoji’s (1985) proposals seem to hold even in English, too. Moreover, when extended to Korean passive and scrambling (Kim 1990, Ahn 1990 among others), their proposals do not hold, since as we will see later in section 3, certain types of QPs in Korean can take inverse scope in these constructions.

2. Proposal

As an alternative, we propose that the difference in the availability of object raising by which the object QP can c-command a member of the chain headed by the subject QP is directly responsible for the scope pattern in (1), together with the assumption that the quantifier raising rule does not exist as part of universal grammar à la Hornstein (1995).

It has been proposed that subject in transitive construction is base-generated either in Spec TP or Spec VP in languages like Korean (see Kitagawa 1986, Aoun & Li 1989, 1993). The basic intuition behind the two proposals is that Spec TP or Spec VP can be a case and θ -position, which in effect prevents the subject from further moving for case checking as opposed to the subject in English, which is claimed to undergo movement from Spec VP into Spec TP (or Spec AgrsP). We will opt for the Spec TP option for the base subject position in Korean. It should be noted, however, that for our purpose here either of the two options works.

With the parametric variation in the subject position in mind, let us consider the following data in (3-4):²

- (3) a. The person who produced it_i admires every movie_i. (Fox 2000:37)
 b. The expert who was invited to talk about it_i knows the capital of every country_i.
- (4) a. ?*[ku_i-uy haksayng-ul koyong-han] ku saepka-nun
 his-POSS student-ACC employed the businessman-TOP
 motwun cito kyoswu_i-lul conkyenghanta.
 every advisor-ACC admires
 ‘The businessman who employed his_i student admires every advisor_i.’
 b. ?*[ku_i-uy haksayng-ekey chotay-toyn] ku saepka-nun
 his-POSS student-by was invited the businessman-TOP
 motwun cito kyoswu_i-lul conkyenghanta.
 every advisor-ACC admires
 ‘The businessman who was invited by his_i student admires every_i advisor.’

It is well-known that a deeply embedded bound pronoun does not induce weak crossover effect in English, thus properly giving a bound variable interpretation as shown in (3). However, similar examples in Korean as in (4) do not yield a bound variable interpretation. Given quantifier raising, the difference in grammaticality in (3-4) is thus quite puzzling unless one may hypothesize that quantifier raising is parameterized such that it is available in English while it is not so in Korean, which is not conceptually plausible however.

We propose the difference in the availability of bound variable construal between the two languages as in (3-4) is essentially attributed to the difference in the availability of the object raising by which the object can c-command a member of the chain headed by the subject. In English, the pronoun which is part of the subject is bound by the universal quantifier at some point, with the object raised into Spec AgroP (given derivational approach to binding, see Ausin 2000), while this is simply impossible in Korean, since the object does not raise high enough to c-command a member of the chain headed by the subject.

The data in (5) from Runner (1995:39-40) indeed suggest that object is raised out of VP into Spec AgroP in English in overt syntax.

² Some researchers (Hong 1985, Choe 1988) notes that Korean third person singular pronoun *ku* ‘he’ cannot have a bound variable interpretation. Indeed it seems that this pronoun cannot be construed as a bound variable at least as easily as English counterpart. However, when the NP modified by this pronoun enters into a close relationship with the antecedent as in the example below, bound variable construal can be obtained.

Motwun cito haksayng-i ku_i-uy cito kyoswu-lul conkyenghanta.
 every student-NOM his-POSS advisor-ACC admires
 ‘Every student_i admires his_i advisor.’

- (5) a. Ginger saw Mary Ann in the park after dinner and at the dock around sunset.
 b. Ginger saw Mary Ann, and Thurston saw Lovey, in the park after dinner.

Given the assumption that the object is raised out of VP in overt syntax in the across the board fashion to check accusative case in Spec AgroP (with the verb also raised into a functional projection out of VP in the same fashion), the coordination construction in (5a) can be understood as involving VP coordination. The right node raising construction in (5b) can also be understood as involving raising of VP to the right periphery of the sentence after the object moved out of VP to Spec AgroP at overt syntax in the across the board fashion to check accusative case (with the verb also raised into a functional projection out of VP in the same fashion). The following example of the pseudo gapping ellipsis also points to this generalization:

- (6) Mary hired John, and Susan will hire Bill. (Lasnik 1999:197)

As for Korean, we proposed that the lack of bound variable construal in (4) is ascribed to the non-availability of the object raising in Korean (either overtly or covertly), by which the object can c-command a member of the chain headed by the subject. One can apparently construct a Korean sentence corresponding to the one in (5a), which may suggest that Korean has overt object raising, too. However, given the fact that clause medial scrambling is allowed relatively freely in Korean, one cannot safely conclude that Korean indeed has overt object raising. We note, however, that it is immaterial whether the Korean construction corresponding to the one in (5a) is either by the overt object raising or by clause medial scrambling; the raised object will necessarily end up in a position lower than the subject position under the assumption that subject is base generated in Spec TP (or Spec VP) and does not undergo further movement for case reasons.

We thus maintain that the Korean transitive construction does not have object raising either overtly or covertly, by which the object can c-command a member of the chain headed by the subject. The LF structures for Korean and English transitive sentence in (1) may thus be represented as in (7-8), respectively.

- (7) [TP nwukwunka [XP motwun salam-ul_i [VP t_i coahanta]]
 someone-NOM everyone-ACC love
 'Someone loves everyone.'

- (8) [AgrsP someone_i [TP [AgrsP everyone_j [VP t_i like t_j]]]]

The only difference between the representations in (7) and (8) is that the universal quantifier in the object position c-commands a trace headed by the subject QP in English while that is not the case in Korean. This suggests that

the universal quantifier can take inverse scope iff it c-commands a member of the chain headed by the other QP. Indeed Aoun & Li (1993) observes that the trace somehow participates in scope. We will thus adopt the notion of chain scope by Aoun & Li (1993:11) and propose the following inverse scope principle, which we suggest applies at LF:

- (9) A quantifier A can have inverse scope over a quantifier B which c-commands A iff A is a universal quantifier and c-commands a member of the chain headed by B.

Thus the lack of inverse scope by the object universal quantifier in (7) in Korean as opposed to the English counterpart in (8) is accounted for in the following way: *Motwun salam* 'everyone' in (7) cannot c-command *nwukwunka* 'someone' in Spec TP, hence there is no inverse scope. *Everyone* in (8) c-commands a trace, which is a member of the chain headed by *someone*, hence there is inverse scope.

Interestingly enough, the universal quantifier both in English and Korean cannot take inverse scope in the double object construction in (2), which we repeat as (10).

- (10) a. John assigned someone every problem. (Aoun and Li 1993:12)
 b. John-i nwukwunka-ekey motwun mwuncey-lul necuessta.
 J-NOM someone-DAT every problem-ACC assigned
 'John assigned someone every problem.'

Many proposals were made in the literature regarding the structure of this construction (see Chomsky 1981, Kayne 1984, Barss & Lasnik 1986, Larson 1988, 1990 and Aoun & Li 1993). Barss & Lasnik (1986) shows that the indirect object asymmetrically c-commands the direct object based on the following data in (11-12):³

- (11) a. I showed John_i himself_i in the mirror.
 b. *I showed himself_i John_i in the mirror.
- (12) a. I showed every friend_i of mine his_i photograph.
 b. *I showed its_i trainer every lion_i.

Moreover, the data in (13-14) from Runner (1995:91-92) regarding coordination and right node raising in English suggest that the indirect object moves out of VP overtly.

³ Building on Barss & Lasnik (1986), Larson (1988) proposes a double object construction with multiple VP shell structure where the indirect object moves into higher Spec VP position, while the direct object is adjoined to V' projection. We diverge from that structure since the trace of the indirect object position is c-commanded by the direct object position, which may license (11b) given the claim for anywhere condition for binding condition A (see Belletti & Rizzi 1988).

- (13) a. I gave John the book in the morning and the magazine in the evening.
 b. Rachel sent Marcia a telegram at her office and a box of roses at her apartment.
 c. I showed Sam my gardenias after breakfast and my daffodils after lunch.
- (14) a. I have given John and Sam has given Bill a pewter mug for Christmas.
 b. I showed Sam and once even showed Peter the tattoo on my leg in the shower.

The coordination data in (13) can be understood as VP coordination assuming the indirect object moved out of VP into Spec AgroP at overt syntax in the across the board fashion (with the verb raised into a functional projection in the same fashion). Essentially the same account can be given for the right node raising construction in (14). What underwent right node raising is the remnant VP with the indirect object and the verb out of VP in the across the board fashion at overt syntax. The contrast in grammaticality in pseudo gapping ellipsis construction in (15) as cited in Lasnik (1999:198) further suggests that what is raised into Spec AgroP for case checking is only the indirect object but not the direct object, which means the direct object does not bear structural case but inherent case.

- (15) a. ?John gave Bill a lot of money and Mary will give Susan a lot of money.
 b. *John gave Bill a lot of money and Mary will give Susan a lot of money.

The point is further supported in the passive construction in (16).

- (16) a. Buddy was sent the letter.
 b. *The letter was sent Buddy.

Turning to the Korean double object construction the following paradigms regarding anaphor binding and variable binding as illustrated in (17-18) suggests that indirect object preceding the direct object asymmetrically c-commands the direct object in Korean (also see Suh (1990:58-59):

- (17) a. John-un Mary_i-ekey casin_i-ul kewul-lo poyecwuessta.
 J-TOP M-DAT self-ACC mirror-in showed
 'John showed Mary herself in the mirror.'
 b. *?John-un casin_i-ekey Mary_i-lul kewul-lo poyecwuessta.
 J-TOP self-DAT M-ACC mirror-in showed
 'John showed herself_i Mary_i in the mirror.'
- (18) a. John-i motwun tayhak_i-ey kukos_i enehakkwa-uy
 J-NOM every university-DAT its linguistics dept.-POSS

- ciwense-lul ponayessta.
 application form-ACC sent
 'John sent every university_i its_i linguistics dept. application form.'
- b. ??John-i kukos_i enehakwa-ey motwun tayhak-uy_i
 J-NOM its linguistics dept.-DAT every university-POSS
 ciwense-lul ponaessta.
 application form-ACC sent
 'John sent its_i linguistics department every university_i's application form.'

The example in (17b) further suggests that the direct object does not raise across the indirect object at any point in the derivation given the anywhere condition for binding A (see fn.3). The data in (19) also indicate that the indirect object does not raise across the subject at any point in the derivation.

- (19) a. ?*[ku_i-uy haksayng-ul chotay-han] ku saepka-nun
 his-POSS student-ACC invited the businessman-TOP
 motwun cito kyoswu_i-ekey senmul-ul cwuessta.
 every advisor-DAT gift-ACC gave
 'The businessman who invited his_i student gave every advisor_i a gift.'
- b. ?*[ku_i-uy haksayng-ekey chotay-toyn] ku saepka-nun
 his-POSS student-by was invited the businessman-TOP
 motwun cito kyoswu_i-ekey senmul-ul cwuessta.
 every advisor-DAT gift-ACC gave
 'The businessman who was invited by his_i student gave every_i advisor a gift.'

One can apparently construct Korean sentences corresponding to the ones in (13). We again note that it is immaterial whether the Korean constructions corresponding to the ones in (13) are either by the overt indirect object raising or by clause medial scrambling for the reason we already mentioned before.

We will thus assume the following LF representations for English and Korean double object constructions respectively, without further discussion:

- (20) a. [_{AgroP} NP_i [_{AgroP} NP_j [_{VP} [t_i [_{V'} [t_j [_{V'} [V NP_k]]]]]]]] (English)
 b. [_{TP} NP_i [_{XP} NP_j [_{VP} [t_j [_{V'} [NP_k V]]]]] (Korean)

Given the structures in (20), the non-ambiguity of the examples in (10) follows, since none of the two structures in (20) gives rise to a configuration where the direct object QP can c-command a member of the chain headed by the indirect object QP, hence there is no inverse scope.

3. Principal filter and Scope Interaction

Now let us consider various types of QPs and their scope interaction in the two

languages. Contrary to the ideal view that quantifiers behave in a uniform way (see May 1977, 1985), a close examination of the inverse scope of various types of quantifiers indicates that they do not behave in a uniform fashion. Liu (1997) for example observes that object QPs, which belong to monotone-decreasing QPs and modified QPs cannot take inverse scope over the subject QP in transitive construction. Thus the following types of object quantifiers in (21) will not be able to induce inverse scope:

- (21) a. Someone invited more than two students.
 b. Someone invited less than three students.
 c. Someone invited exactly two students.
 d. Someone invited no student.
 e. Someone invited few students.
 f. Someone invited most students.

Our research, however, suggests that the QPs which cannot take inverse scope includes a number QP such as *three students* too, although the judgment is subtle.⁴ Thus only sentences in (22) have a reading where the object quantifiers can take inverse scope over the subject quantifiers.

- (22) a. Someone invited everyone.
 b. Someone invited John and Mary.
 c. Someone invited these two students.

What will be a semantic generalization for the object QPs in (22)? One may think of a monotone-increasing function as a semantic generalization characteristic of these quantifiers. This generalization is too loose, however, since number QPs such as *three students* are also monotone-increasing. The object quantifiers in (22) should be defined more strictly than in terms of monotone-increasing function. We suggest the principal filter as a generalization. Indeed, the object quantifiers in (22) are all principal filters, but none of the object QPs in (21) is. For example, *everyone* is a principal filter since the set denoted by *everyone* always belongs to the set denoted by whatever predicate it takes. The same is true for the proper name and definite description. Consider the following corresponding Korean paradigm in (23-24):⁵

⁴ Some researchers (May 1985, among others) report number QP can take inverse scope. However, the informants I consulted mostly report that this reading is really difficult to get. To get this reading, either the subject number QP (the number in particular) should be destressed or the object number QP should be stressed. This may indicate the stressed object number QP (or non-stressed object number QP) can more or less act as a principal filter like *the two students*. Schein p.c. notes, however, the number QP can take inverse scope given a relevant situation, which is something like this: Two witnesses are required to testify against two defendants.

⁵ For the completeness of the paradigm, it should be mentioned that Korean does not have a quantifier with negative determiner such as *no man* and *few man*.

- (23) a. Nwukwunka motwun salam-ul chotayhaessta.
 someone-NOM everyone-ACC invited
 ‘Someone invited everyone.’
- b. Nwukwunka John-kwa Mary-lul chotayhaessta.
 someone-NOM J-and M-ACC invited
 ‘Someone invited John and Mary.’
- c. Nwukwunka ce twu myeng-uy salam-ul chotayhaessta.
 someone-NOM these two CL-POSS man-ACC invited
 ‘Someone invited these two men.’
- (24) a. Nwukwunka twu myeng-uy salam-ul chotayhaessta.
 someone-NOM two CL-POSS man-ACC invited
 ‘Someone invited two men.’
- b. Nwukwunka twu myeng isang-uy salam-ul chotayhaessta.
 someone-NOM two CL-POSS more-POSS man-ACC invited
 ‘Someone invited more than two men.’
- c. Nwukwunka se myeng iha-uy salam-ul chotayhaessta.
 someone-NOM three CL less-POSS man-ACC invited
 ‘Someone invited less than three men.’
- d. Nwukwunka kokk twu myeng-uy salam-ul chotayhaessta.
 someone-NOM exactly two CL-POSS man-ACC invited
 ‘Someone invited exactly two men.’

None of the object quantifiers in Korean in (23-24) can have inverse scope over the subject QP. The lack of inverse scope receives a straightforward account, since none of the object QPs in (23-24) raises into a position high enough to c-command a member of the chain headed by the subject QP. Thus, one may revise the initial generalization in (9) into the following in (25):

- (25) A quantifier A can have inverse scope over a quantifier B which c-commands A iff A is a principal filter and c-commands a member of the chain headed by B.⁶

Then the prediction is that the principal filter quantifier in Korean will be able to have inverse scope over the other QP in a structurally higher position, when the principal filter quantifier c-commands a member of the chain headed by the other QP, given the generalization in (25). For this let us turn to scrambling and passive construction in Korean, which have been claimed to involve movement (Ahn 1990, Kim 1990). These constructions all confirm the prediction we make.

⁶ The apparent wide scope interpretation of the object QP *someone* below may pose a potential problem to the generalization in (25):

Everyone loves someone.

However, we wish to attribute this reading to the specific interpretation of *someone*.

3.1. Scrambling

Scrambling, especially clause-internal scrambling has been assumed to involve syntactic movement (Aoun & Li 1993, Kuroda 1988, cf. Kim 1990:155, Ahn 1990:161,fn.166).

- (26) a. *Nwukwunka-lul motwun kyoswu-ka chotayhaessta.*
 someone-ACC every professor-NOM invited
 ‘Someone, every professor likes.’
 b. *Nwukwunka-lul John-kwa Mary-ka chotayhaessta.*
 someone-ACC J-and M-NOM invited
 ‘Someone, John and Mary invited.’
 c. *Nwukwunka-lul ce twu kyoswu-ka chotayhaessta.*
 someone-ACC these two professor-NOM invited
 ‘Someone, these two professors invited.’

The subject QPs in (26) can take inverse scope over the object QPs, while the subject QPs in (27) cannot.

- (27) a. *Nwukwunka-lul twu myeng-uy salam-i chotayhaessta.*
 someone-ACC two CL-POSS man-NOM invited
 ‘Someone, two men invited.’
 b. *Nwukwunka-lul twu myeng isang-uy salam-i chotayhaessta.*
 someone-ACC two CL-POSSmore-POSS man-NOM invited
 ‘Someone, more than two men invited.’
 c. *Nwukwunka-lul se myeng iha-uy salam-i chotayhaessta.*
 someone-ACC three CL less-POSS man-NOM invited
 ‘Someone, less than three men invited.’
 d. *Nwukwunka-lul kokk twu myeng-uy salam-i chotayhaessta.*
 someone-ACC exactly two CL-POSS man-NOM invited
 ‘Someone, exactly two men invited.’

Thus the sentence in (26a) can have a reading where *nwukwunka* ‘someone’ is the function of *motwun kyoswu* ‘every professor’. Meanwhile, the sentence in (27b), for example, does not easily have a reading where *nwukwunka* ‘someone’ is the function of *twu myeng isang-uy salam* ‘more than two men’. The difference in the availability of the inverse scope in (26-27) follows, given the generalization in (25): the subject QPs in (26) are principal filter quantifiers and can c-command a member of the chain headed by the scrambled QP, hence inverse scope. However, inverse scope is not available in (27), since none of the subject QPs is a principal filter, although the subject QP c-commands a member of the chain headed by the scrambled QP, thus confirming the generalization in (25).

3.2. Passive

Let us turn now to the passive, which involves movement of the thematic object into the subject position. As for Korean passive, it has often been a topic of controversy whether passive construction involves the kind of raising witnessed in English passive construction. The source of this controversy is due to the fact that Korean is a typical head-final language, and the movement is thus string vacuous. Thus to show evidences for movement is a nontrivial task. For this, we will adopt a floated quantifier stranding test for the movement, assuming a floated quantifier indicates the base position of the quantifier associated with it (Sportiche 1988:428f). Consider the following passive construction with a floated quantifier in (28), which is a variant of the one in Ahn (1990:194):

- (28) Piwihayngwi-ka motwun cosawiwon-eyuyhay hana-ka
 illegal act-NOM every investigator-by one-NOM
 palkyentoyessta.
 was found
 ‘An illegal act was found by every investigator.’

The sentence in (28) suggests that Korean passive involves movement into surface subject position. Since we have established that passive constructions involve movement in Korean, let us consider the following in (29-30):

- (29) a. Someone was criticized by every professor.
 b. Someone was criticized by John and Mary.
 c. Someone was criticized by these two professors.
- (30) a. Nwukwunka motwun kyoswu-ekey piphantoyessta.
 someone-NOM every professor-by was criticized
 ‘Someone was criticized by every professor.’
 b. Nwukwunka John-kwa Mary-ekey piphantoyessta.
 someone-NOM J-and M-by was criticized
 ‘Someone was criticized by John and Mary.’
 c. Nwukwunka ce twu kyoswu-ekey piphantoyessta.
 someone-NOM these two professor-by was criticized
 ‘Someone was criticized by these two professors.’

Native speakers whom we consulted mostly report that the thematic subject QP in (29-30) can somehow take inverse scope over the surface subject QP. Thus the sentences in (29a-30a) for example can have the reading where *someone* co-varies with the choice of a *professor*. The inverse scope in (29-30) again follows, given the generalization in (25): the thematic object QP is directly raised into the surface subject position out of VP in the two languages so that its trace is c-commanded by the thematic subject QP, which is a principal filter, hence there can be inverse scope. Now let us consider the following examples in (31-32):

- (31) a. Someone was criticized by two professors.
 b. Someone was criticized by more than two professors.
 c. Someone was criticized by less than three professors.
 d. Someone was criticized by exactly two professors.
- (32) a. Nwukwunka twu myeng-uy kyoswu-ekey piphantoyessta.
 someone-NOM two CL-POSS professor-by was criticized
 ‘Someone was criticized by two professors.’
 b. Nwukwunka twu myeng isang-uy kyoswu-ekey piphantoyessta.
 someone-NOM two CL more-POSS professor-by was criticized
 ‘Someone was criticized by more than two professors.’
 c. Nwukwunka se myeng iha-uy kyoswu-ekey piphantoyessta.
 someone-NOM three CL less-POSS professor-by was criticized
 ‘Someone was criticized by less than three professors.’
 d. Nwukwunka kkok twu myeng-uy kyoswu-ekey piphantoyessta.
 someone-NOM exactly two CL-POSS professor-by was criticized
 ‘Someone was criticized by exactly two professors.’

Meanwhile, although the judgments for (31a-32a) seem to be subtle, the sentences in (31-32) in general cannot have inverse scope of the thematic subject QP over the surface subject QP. Thus the reading where *someone* co-varies with the choice of a *professor* is difficult to get. Our generalization in (25) also extends to the above examples in (31-32): none of the thematic subject QPs is a principal filter QP so that it cannot take inverse scope over the surface subject QP, although it c-commands a member of the chain headed by the surface subject QP.

4. Conclusion

To summarize, we have shown that only a principal filter quantifier can easily take inverse scope over the QP in a structurally higher position iff the principal filter quantifier c-commands a member of the chain headed by the quantifier. The difference in the availability of inverse scope between English and Korean transitive construction was attributed to the availability of object raising by which the object can c-command a member of the chain headed by the subject, rather than language-particular constraints such as S structure restructuring (Huang 1982) and LF filter (Hoji 1985).

Acknowledgements

We would like to express our sincere thanks to JinHee Kim and Matthew Shomphe for acting as primary informants for Korean and English respectively. All the remaining errors are of course ours.

References

- Ahn, S-H. (1990). *Korean quantification and universal grammar*. Diss, University of Connecticut, Storrs.
- Aoun, J. & A. Li. (1993). *The syntax of scope*. MIT Press, Cambridge, MA.
- Aoun J. & A. Li. (1989). Scope and constituency. *Linguistic Inquiry* 20, pp.141-172.
- Barss, A. & H. Lasnik. (1986). A note on anaphora and double objects. *Linguistic Inquiry* 17, pp. 347-354.
- Belletti, A. & L. Rizzi (1988). Psych-verbs and θ -theory. *Natural Language and Linguistic Theory* 6, pp. 291-352.
- Choe, H-S. (1988). *Restructuring parameters and complex predicates -a transformational approach*. Diss, MIT, Cambridge, MA.
- Chomsky, N. (1981). *Lectures on government and binding*. Foris, Dordrecht.
- Chomsky, N. (1995). *The minimalist program*. MIT Press, Cambridge, MA.
- Fox, D. (2000). *Economy and semantic interpretation*. MIT Press, Cambridge, MA.
- Hoji, H. (1985). *Logical form constraints and configurational structure in Japanese*. Diss, University of Washington.
- Hong, S-S. (1985). *A and A' binding in Korean and English: Government and binding parameters*, Diss, University of Connecticut, Storrs.
- Hornstein, N. (1995). *Logical form, from GB to minimalism*. Blackwell, Malden, MA.
- Huang, C-T, J. (1982). *Logical relations in Chinese and the theory of grammar*. Diss, MIT, Cambridge, MA.
- Kayne, R. (1984). *Connectedness and binary branching*. Foris, Dordrecht.
- Kim, S-W. (1990). *Chain scope and quantification structure*. Diss, Brandeis University.
- Kitagawa, Y. (1986). *Subjects in Japanese and English*, Diss, University of Massachusetts, Amherst.
- Kuroda, S-Y. (1988). Whether we agree or not: A comparative syntax of English and Japanese. *Linguisticae Investigationes* 21, pp. 1-46.
- Larson, R. (1988). On the double object construction. *Linguistic Inquiry* 19, pp. 335-391.
- Larson, R. (1990). Double object revisited: Replay to Jackendoff. *Linguistic Inquiry* 21, pp. 589-632.
- Lasnik, H. (1999). Chains of arguments. Epstein, S. & N. Hornstein (eds.), *Working minimalism*. MIT Press, Cambridge, MA.
- Liu, F-S. (1997). *Specificity and quantifier scope*. John Benjamins, Philadelphia.
- May, R. (1977). *The grammar of quantification*. Diss, MIT, Cambridge, MA.
- May, R. (1985). *Logical form*. MIT Press, Cambridge, MA.
- Reinhart, T. (1976). *The syntactic domain of anaphora*. Diss, MIT, Cambridge, MA.
- Runner, G. (1995). *Noun phrase licensing and interpretation*, Diss, University of Massachusetts, Amherst.
- Sportiche, D. (1988). A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry* 19, pp.425-450.
- Szabolcsi, A. (1997). Background Notions in Lattice Theory and Generalized Quantifier. Szabolcsi, A. (ed.), *Ways of Scope Taking*. Kluwer, Boston.
- Suh J-H. (1990). *Scope phenomena and aspects of Korean syntax*. Diss, University of Southern California, Los Angeles.

Subject doubling in Dutch dialects

Jeroen van Craenenbroeck & Marjo van Koppen

This paper deals with pronominal subject doubling in three dialects of Dutch. We make a distinction between two types of doubling: clitic doubling and topic doubling. The former only occurs in subclauses and inverted main clauses, whereas the second is restricted to subject-initial main clauses. A clitic doubled subject consists of a clitic and a strong pronoun. We take them to be merged as one DP. A topic doubled subject on the other hand always involves a non-clitic pronoun doubled by a strong pronoun. Here, we analyse the doubling pronoun as the spelling out of a subject trace. Both analyses consist of two parts: one which is situated in narrow syntax and one which takes place at PF.

1. Two types of pronominal doubling

In this section we discuss data concerning pronominal doubling in three dialects of southern Dutch, namely the dialects of Wambeek and Lapscheure and the regiolect of the Belgian province of Brabant. We make a distinction between two types of pronominal doubling: clitic doubling and topic doubling.

1.1. Clitic doubling

The first type of pronominal subject doubling, clitic doubling, has frequently been discussed in the literature on Dutch dialects (cf. de Geest 1995, Haegeman 1992, Zwart 1993). The main characteristics of this type of subject doubling are that the first subject element is always a clitic pronoun, while the second is necessarily a strong pronoun.¹ Consider the examples in (1).

¹ Throughout this paper we will make use of the tripartition of the pronominal system into clitic, weak and strong pronouns as proposed by Cardinaletti & Starke (1999). For argumentation that their tripartition also holds for the pronominal systems of the dialects under consideration here, cf. Van Craenenbroeck & Van Koppen (2000).

- (1) a. **Subclauses** (Wambeek)
 da me ze waaile nuir ojsh gojn bringen.
 that we_{CLITIC} them we_{STRONG} to home go bring
 ‘...that we’re going to take them home.’
- b. **Inverted main clauses**
 Nuir ojsh gon me ze waaile bringen.
 to home go we_{CLITIC} them we_{STRONG} bring
 ‘Home were going to take them.’
- c. **Subject-initial main clauses**
 * Me gojn ze waaile nuir ojsh bringen.
 we_{CLITIC} go them we_{STRONG} to home bring

The sentences in (1a-b) show that clitic doubling can occur in subclauses and inverted main clauses. The c-example on the other hand demonstrates that this construction is not allowed in subject-initial main clauses. The properties of clitic doubling are summarised in the table below.

Clitic Doubling			
dialect	sentence type	1 st subj. element	2 nd subj. element
Lapscheure	subclauses inverted main clauses *subj.-ini.main clauses	clitic	strong
Brabant Dutch	subclauses inverted main clauses *subj.-ini.main clauses	clitic	strong
Wambeek	subclauses inverted main clauses *subj.-ini.main clauses	clitic	strong

1.2. Topic doubling

So far, the second type of subject doubling, topic doubling, has –at least to our knowledge– gone unnoticed in the linguistic literature. In this type of subject doubling the first subject element can be a weak pronoun, a strong pronoun, a proper name or a definite DP (depending on the dialect), but never a clitic pronoun. The second subject element is always a strong pronoun. As the data in (2) show, the dialects under consideration here vary with respect to the first subject element they allow in this construction.

- (2) a. { Ze / *Zie / *Da wuf / *Marie } goa zie. (Lapscheure)
 { she_{WEAK} / she_{STRONG} / that woman / Mary } goes she_{STRONG}
 ‘She is going.’

- b. { Ze / Zij /*die vrou /*Marie } komt zij. (Brabant)
 { she_{WEAK} / she_{STRONG} /that woman / Mary } comes she_{STRONG}
 ‘She will come.’
- c. { Ze / zij / dei vrou / Marie } gui zij. (Wambeek)
 { she_{WEAK} / she_{STRONG} / that woman / Mary } goes she_{STRONG}
 ‘She/that woman/Mary is going.’

Example (2a) shows that in the Lapscheure dialect the first subject element can only be a weak pronoun. In the Brabant Dutch regiolect (2b) it can be both a weak and a strong pronoun, while the dialect of Wambeek has the largest set of possibilities. The first subject element in this dialect can be a weak pronoun, a strong pronoun, a proper name or a definite DP. There is no variation concerning the second subject element in these dialects: this is always a strong pronoun. Just like clitic doubling, topic doubling is restricted in its syntactic distribution. Consider the data in (3).

- (3) a. **Subject-initial main clauses** (Wambeek)
 Dei vrou gui zij nuir ojsh.
 that woman goes she_{STRONG} to home
 ‘That woman is going home.’
- b. **Subclauses**
 * ... da dei vrou zij nuir ojsh guit.
 that that woman she_{STRONG} to home goes
- c. **Inverted main clauses**
 * Nuir ojsh gui dei vrou zij.
 to home goes that woman she_{STRONG}

Topic doubling can only occur in subject-initial main clauses (3a). The examples in (3b-c) show that it is not possible in inverted main clauses or subclauses. The properties of topic doubling are summarised in the table below.

Topic Doubling			
dialect	sentence type	1 st subj. element	2 nd subj. element
Lapscheure	subj.-ini.main clauses *subclauses *inverted main clauses	weak	strong
Brabant Dutch	subj.-ini.main clauses *subclauses *inverted main clauses	weak, strong	strong
Wambeek	subj.-ini.main clauses *subclauses *inverted main clauses	weak, strong, definite DP, proper name	strong

2. The analysis

2.1. Theoretical assumptions

Before moving on to the analysis of subject doubling, we want to introduce some theoretical concepts and ideas we will make use of in the rest of this paper. The first concerns the internal structure of a clitic doubled subject. It has often been noted that in many languages clitics are homophonous with determiners (cf. Uriagereka 1995, Cardinaletti & Starke 1994, fn 65). This parallelism is illustrated for French in (4).

- | | | | | | | | | |
|-----|------|------|--------------------|----------------------|---|------|-----------------------|------------------|
| (4) | Jean | voit | le | garcon. | - | Jean | le | voit. |
| | John | sees | the _{DET} | boy | - | John | him _{CLITIC} | sees |
| | | | | 'John sees the boy.' | - | | | 'John sees him.' |

An obvious way to give a structural interpretation to this empirical generalisation is to assume that clitics and determiners are merged in the same structural position. That would straightforwardly explain why in many languages these elements are so alike. This is the option we adopt. We take both clitics and determiners to be merged in the D°-head of a DP. Furthermore, we assume that the second element in a clitic doubled subject (the strong pronoun) is merged as the head of an NP that is the complement of the clitic in D° (cf. also Uriagereka 1995; Laenzlinger 1998; Grohmann 2000). Together the clitic and the strong pronoun form a single DP.

The second theoretical claim we want to introduce in this subsection concerns the defining characteristic of clitics. We assume that clitics always need to attach to a phonologically realised head. This can come about in two ways: parasitically on an instance of syntactic movement² or as the result of cliticisation at PF. Furthermore, we assume that Dutch clitics are enclitic. This implies that they always end up on the right-hand side of their host.

2.2. Clitic doubling

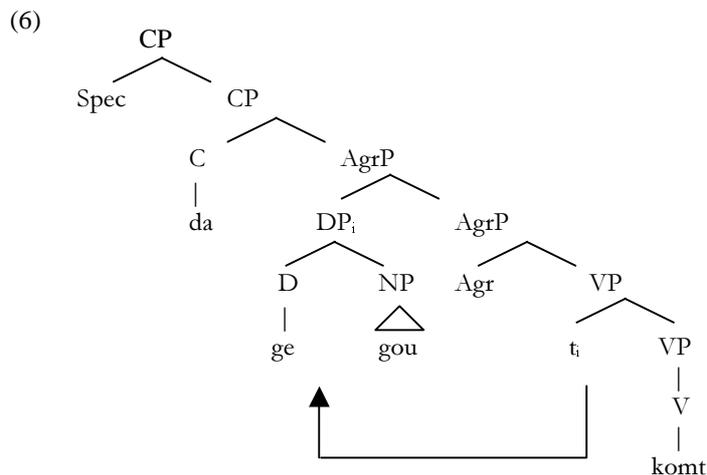
In this subsection we give an analysis of clitic doubling in embedded clauses and inverted main clauses. This analysis also provides an explanation for the absence of clitic doubling in subject-initial main clauses. In (5) an example of clitic doubling in an embedded clause is given.³

- | | | | | | | |
|-----|-----|------|-----------------------|-----------------------|--------------------------|-----------|
| (5) | ... | da | ge | gou | komt. | (Wambeek) |
| | | that | you _{CLITIC} | you _{STRONG} | come | |
| | | | | | '...that you're coming.' | |

² As the clitic's requirement to attach to a phonologically realised head is a strictly phonological one, it is not an appropriate trigger for syntactic movement. Therefore, if the clitic does find a host in narrow syntax, it would have to be the result of an instance of movement triggered by other (syntactic) factors.

³ In this example we abstract away from the placement of object clitics (compare 1a). For a elaborate discussion of object clitics, cf. Van Craenenbroeck & Van Koppen (in prep.).

The derivation of this sentence consists of two parts. The first takes place in narrow syntax. It is illustrated in (6).



The subject DP, containing both the clitic and the strong pronoun, moves from the specifier of VP to the specifier of AgrP. The C°-position is filled with the complementizer *da* ('that') and the finite verb stays in its base position. At this point the syntactic derivation is finished. The clitic pronoun *ge* ('you'), however, has not yet found a phonologically realised head to attach to. As a result it will have to find one at PF. This is illustrated in (7).

(7) **Phonological Form**

$[_{CP} da [_{AgrP} ge gou [_{VP} komt]]] \rightarrow [_{CP} da+ge [_{AgrP} gou [_{VP} komt]]]$

As the clitic pronoun is enclitic, it has to search for a host to its left. The complementizer in C° is the first (and only) available host for the clitic. It attaches on the right-hand side of the complementizer.

The derivation of clitic doubling in inverted main clauses does not differ much from that of clitic doubling in subclauses. Consider the sentence in (8).

- (8) Mergen kom de gou. (Wambeek)
 tomorrow come you_{CLITIC} you_{STRONG}
 'Tomorrow you will come.'

The derivation of this sentence again consists of two parts. The first takes place in narrow syntax. The clitic doubled subject – generated as one DP – moves from the specifier position of VP to the specifier position of AgrP. The verb moves from V° via Agr° to C° (cf. Zwart 1993, 1997). The Spec,CP-position is occupied by the

adverb *mergen* ('tomorrow').⁴ This concludes the narrow syntax derivation of the sentence in (8). Again the subject clitic has not yet found a host. This means it has to look for one at PF. To its left there is only one suitable host, namely the finite verb. Thus the clitic attaches to the verb. This is illustrated in (9).

(9) **Phonological Form**

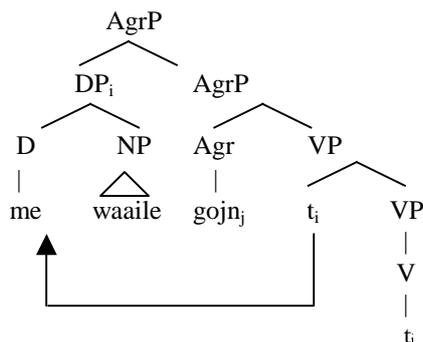
[_{CP} Mergen kom [_{AgrP} ge gou [_{VP}]]] → [_{CP} Mergen kom+de [_{AgrP} gou [_{VP}]]]

Now let's turn to subject-initial main clauses. Recall that clitic doubling is excluded in this sentence type.

(10) * Me gojn waaile. (Wambeek)
 we_{CLITIC} go we_{STRONG}

Reasoning along the lines of the analysis outlined above, one would expect the sentence in (10) to have a syntactic derivation such as in (11).

(11)



The structural analysis in (11) is identical to the one of inverted main clauses, the only difference being that in non-inverted main clauses the verb only moves up to Agr° (cf. Zwart 1993, 1997). As the phrase marker is handed over to PF, however, the analysis runs into problems. The subject clitic *me* ('we') has not found a suitable host in narrow syntax. Therefore we expect it to look for such a host at PF. As there is no phonologically realised head available to the left of the subject clitic (the C°-position being empty), the derivation crashes. This is illustrated in (12).

(12) **Phonological Form**

[_{AgrP} me waaile komme [_{VP} ...]] → *me [_{AgrP} waaile komme [_{VP} ...]]

⁴We abstract away from the base-generated position of *mergen*. The only thing that is relevant for our analysis is that it ends up in Spec,CP.

Thus clitic doubling is not allowed in subject-initial main clauses under the analysis presented above.

2.3. Supporting evidence: object clitic placement

This subsection provides extra support for the analysis of clitic doubling given in section 2.2. Consider the data in (13).

- (13) a. ... dat-et Valère doar goa kuopen. (Lapscheure)
 that-it_{CLITIC} Valère there goes buy
 ‘...that Valère is going to buy it there.’
 b. ... da Valère da wuf doar gezien eet.
 that Valère that woman there seen has
 ‘...that Valère has seen that woman there.’

This example shows that as far as their syntactic distribution is concerned object clitics behave differently from full object-DPs. Whereas the former immediately follow the complementizer, the latter are situated to the right of the subject. The obvious question to raise at this point is where this distributional difference comes from.

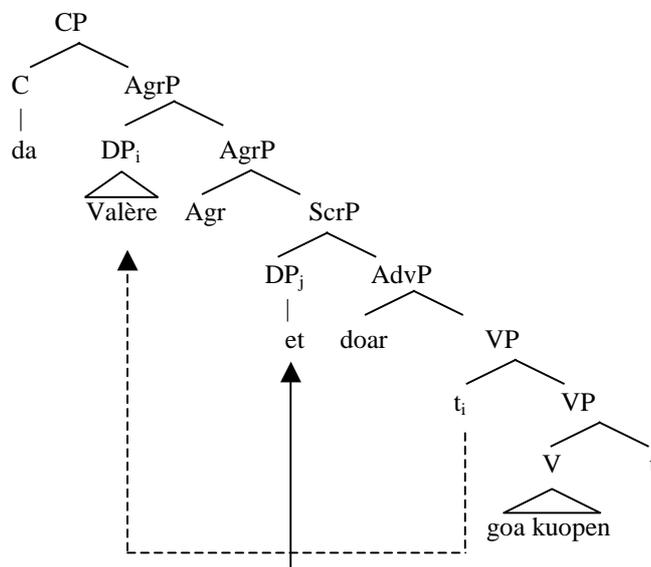
A first step towards the answer concerns the behaviour of deficient pronouns more generally. Consider in this respect the Standard Dutch examples in (14).

- (14) a. Ik heb <jou> gisteren <jou> gezien.
 I have <you_{STRONG}> yesterday <you_{STRONG}> seen
 ‘I have seen you yesterday.’
 b. Ik heb <je> gisteren <*je> gezien.
 I have <you_{DEFICIENT}> yesterday <you_{DEFICIENT}> seen
 ‘I have seen you yesterday.’

The a-sentence shows that a strong object pronoun can occur both before and after the temporal VP-adverb *gisteren* (‘yesterday’). The deficient pronoun *je* (‘you’) on the other hand, can only occur in a position to the left of the adverb. We take this to mean that deficient pronouns necessarily scramble to a position just below the subject (cf. Zwart 1993). Since clitics are deficient pronouns this scrambling mechanism also applies to them. This means that the syntactic derivation of the example in (13a) proceeds as in (15).⁵

⁵ We abstract away from the precise analysis of the VP-adverb *doar* (‘there’). We do assume that it ends up (either by move or by merge) somewhere at the left edge of VP.

(15)



In this structure the subject has moved to Spec,AgrP in order to license case and agreement. The object, being a deficient pronoun, has moved to the Spec of some ScrP, a functional projection just below AgrP.⁶ That concludes the syntactic derivation of this sentence. However, this cannot be the whole story as far as the placement of the object clitic is concerned. It has now climbed past all VP-adverbs (and all other objects), but it is still to the right of the subject. We are therefore forced to assume that the clitic crosses the subject at PF. Recall that in section 2.2 we assumed that Dutch subject clitics are enclitic and that it is a defining characteristic of them that they need to attach to the nearest phonologically realised head. Let us now assume that the same holds for object clitics. This would mean that the object clitic in (13a) needs a phonologically realised head to its left to attach to. Therefore, at PF, it skips the subject-DP and attaches to the nearest phonologically realised head to its left: the complementizer in the C°-position. This is illustrated in (16).

(16) **Phonological Form**

[_{CP} dat [_{AgrP} Valère [_{ScrP} et [_{AdvP} doar [_{VP} goa kuopen]]]]] →
 [_{CP} dat-et [_{AgrP} Valère [_{ScrP} [_{AdvP} doar [_{VP} goa kuopen]]]]]

This analysis makes a further prediction. If a subject clitic is present in the sentence, we expect the object clitic not to move past it. Instead, since the subject clitic is now the nearest phonologically realised head for the object clitic, it

⁶ By using the abstract label ScrP we want to refrain from making any statements about the precise analysis of scrambling or the nature of the projection in which it occurs. The only thing that is relevant for our present purposes is that the deficient pronoun ends up in a position just below the projection hosting the subject.

In this structure the subject-DP first moves to Spec,AgrP in order to license case and agreement. The verb moves along to Agr^o. This does not conclude the ‘narrow syntactic’ derivation of this sentence, however. We assume that in a topic doubling construction, the subject-DP moves to a topic-position (here represented as Spec,CP). Evidence in favour of this movement will be given in section 2.5. The verb again moves along to the head of CP (cf. the V2-requirement of Dutch). At this point in the derivation the phrase marker can be handed over to PF. We now propose to analyse the strong pronoun doubling the subject in a sentence such as (18) as the spell-out of the subject trace in Spec,AgrP.⁷ This is illustrated in (20).

(20) **Phonological Form**

$$[_{CP} \text{ waaile}_i \text{ komme } [_{AgrP} t_i [_{VP} \dots]]] \rightarrow [_{CP} \text{ waaile komme } [_{AgrP} \text{ waaile } [_{VP} \dots]]]$$

One might wonder at this point why it is the trace in Spec,AgrP that gets spelled out and not the one in Spec,VP. We take this to follow from the principles of binding theory. A pronoun in Spec,VP would be locally A-bound by the subject trace in Spec,AgrP, thus violating Condition B. As a result only the highest subject trace in an A-position – i.e. the one in Spec,AgrP – can be spelled out in a topic doubling construction.

Topic doubling is disallowed in subclauses (cf. supra, section 1.2) as is illustrated in (21).

(21) * ... da waaile waaile komme. (Wambeek)
 that we_{STRONG} we_{STRONG} come

Recall that our analysis of topic doubling is a two-step procedure. First the subject is topicalised and then the subject trace in Spec,AgrP is spelled out as a strong pronoun. As it turns out the problem with the sentence in (21) concerns the first of these two steps. Several authors have drawn attention to the fact that Dutch unlike other Germanic languages does not allow embedded topicalisation (Hoekstra & Zwart 1994, 1997; Zwart 1997; Barbiers 2000). This is illustrated in (22).

(22) * Ik denk dat die film Jan gezien heeft. (St.Dutch)
 I think that that movie John seen has
 ‘I think that that movie John has seen.’

Given the analysis outlined above, this observation allows us to account for the absence of topic doubling in subclauses. If the subject cannot be topicalised in this

⁷ The motivation for this spell-out is semantic in nature. Due to restrictions of space, however, we cannot go into this aspect of pronominal doubling here. For more details, cf. Van Craenenbroeck & Van Koppen (2000, in prep).

type of sentence, there is no trace in Spec,AgrP that can be spelled out. Hence, topic doubling is excluded.

As we already mentioned, topic doubling is not possible in inverted main clauses either. This is shown in (23).

- (23) * Mergen komme waaile waaile. (Wambeek)
 tomorrow come we_{STRONG} we_{STRONG}

Again the ungrammaticality of this example follows from step one of our analysis. Assuming there to be only one topic-position in the syntactic structure of a sentence such as (23), namely Spec,CP (cf. Hoekstra & Zwart 1997), it is clear why topic doubling is excluded in this example. The adverb *mergen* ('tomorrow') already occupies the Spec,CP-position in this sentence. As a result the subject cannot move there, there is no trace in Spec,AgrP to be spelled out and topic doubling is impossible.

2.5. Supporting evidence

In this section we present extra evidence in favour of the claim that topic doubled subjects have moved to a topic-position. A first indication concerns the behaviour of quantifiers in topic doubling constructions. On the basis of examples such as the ones in (24) many authors have made a distinction between 'weak' and 'strong' quantifiers (cf. Milsark 1979; Zwarts 1981).

- (24) a. There are some books on the table.
 b. * There are all the books on the table.

Quantifiers which can occur in existential *there*-sentences are traditionally called 'weak' (24a), whereas those that are excluded in these contexts are labelled 'strong' (24b). Milsark (1979:218) notes that weak quantifiers – in his terminology 'non-quantificational' – cannot function as the topic of a sentence. In view of our analysis this observation makes a prediction concerning the possibility of topic doubled quantifiers. If weak quantifiers cannot be topics, then we expect not to find them in topic doubling constructions. This prediction is borne out in (25).

- (25) Alle / *gin manne meege zaailn ie binn (Wambeek)
 all / no men may they_{STRONG} here inside
 'All men can come in.'

This example illustrates that strong quantifiers can, whereas weak ones cannot be topic doubled. However, the situation is more complex than this example suggests. As Barbiers & Rooryck (1998) point out, Milsark's observation needs to be refined further. Some weak quantifiers can be topicalised, but then their meaning shifts from non-specific to generic. An example of this is given in (26) (Barbiers & Rooryck 1998, (5)).

- (26) Een plant staat *(doorgaans) in de tuin. (Standard Dutch)
 a plant stands usually in the garden
 ‘A plant is usually in the garden.’

As the obligatory presence of the temporal adverb *doorgaans* (‘usually’) indicates, the weak quantifier *een* (‘a’) is not interpreted as a non-specific indefinite, but as a generic. With respect to our analysis this predicts that some weak quantifiers can be topic doubled, but only if they are interpreted generically. This prediction is confirmed in (27).

- (27) Een vrouw mag zij ie nie komme. (Wambeek)
 a woman may she here not come
 ‘Women are not allowed to come here.’

In this example the DP *een vrouw* (‘a woman’) can only be interpreted as referring to women in general.

A second clue that our analysis of topic doubling is on the right track comes from the interaction between wh-movement and topic doubling. Consider the example in (28).

- (28) Wie eid-ij da geduin? (Wambeek)
 who has-he_{STRONG} that done
 meaning: * ‘Who has done that?’ (real question)
 ‘It is obvious that X has done that.’ (rhetorical question)
 ‘It is obvious that no one has done that.’ (rhetorical question)

As the English translations of this example show, a wh-phrase can only be topic doubled if the sentence in which it occurs is interpreted as a rhetorical question, not when it is a normal request for information. Again this follows from our analysis in a straightforward manner. Under its normal (question) interpretation a wh-phrase moves to the Spec-position of a specialised WhP. Since it cannot be in a topic-position at the same time, we expect this reading to be incompatible with topic doubling, a prediction that is borne out in (28). The only way it can be topic doubled is when it has moved to a topic-position, but then it loses its wh-interpretation.⁸ This is exactly what happens in the rhetorical readings of the example in (28). There, the wh-phrase refers to an entity which is already known or understood by the hearer (either a specific person or no one at all).

⁸ An anonymous reviewer raises the question as to why the spell out of a trace (a PF-phenomenon) would be dependent on movement to a topic position (which is arguably a LF-phenomenon). We believe this to be related to the fact that the trace is spelled out as a strong pronoun, which necessarily implies known or presupposed information. As this is not compatible with a Wh- or focus-reading only topics can be doubled in this manner.

3. Conclusion

In this paper we have discussed pronominal subject doubling in three dialects of southern Dutch. First of all we have argued that there is not one, but two types of pronominal doubling. The first one is the well-known clitic doubling construction. It always involves a clitic pronoun doubled by a strong pronoun and it only occurs in subclauses and inverted main clauses. The second type of doubling we have called topic doubling. It is restricted to subject-initial main clauses and the first subject element can be a weak pronoun, a strong pronoun, a definite DP or a proper name.

Our analysis of clitic doubling started from the assumption that a clitic doubled subject is merged as one DP. In narrow syntax, this DP moves to the Spec, AgrP-position and at PF the clitic attaches to the nearest phonologically realised head to its left. In subclauses this is the complementizer, in inverted main clauses the fronted finite verb in C°. The absence of such a host to the left of the clitic in subject-initial main clauses prevents clitic doubling from occurring in this type of sentence. Our analysis was further supported by the behaviour of object clitics in the dialects under consideration.

In a topic doubling construction we take the doubling strong pronoun to be the spell-out of the highest subject trace. The subject itself has moved to a topic-position. Evidence in favour of this analysis comes from the behaviour of topic doubled weak quantifiers and the interaction between wh-movement and topic doubling.

Acknowledgements

We would like to thank Sjef Barbiers, Lisa Cheng, Crit Cremers, Aniek IJbema, Aniko Lipták, Lutz Marten, Ineke van der Meulen, Johan Rooryck, the audience of the Workshop on Syntactic Microvariation (Meertensinstitute, Amsterdam, 30-31 August 2000), the audience of ConSole 9 (University of Lund, 8-10 December 2000) and an anonymous SOLE-reviewer, for stimulating discussions and valuable comments. Furthermore, we want to thank Hilda van der Borgh, Wim de Geest, Karolien van Geldre, Liliane Haegeman, Yves d'Hulst and Johan Rooryck for their help with the dialect data. All errors and shortcomings are our own.

References

- Barbiers, S. (2000). Remnant stranding and the theory of Movement. Ms, Meertens Institute, Amsterdam.
- Barbiers, S. & J. Rooryck (1998). On the interpretation of *there* in existentials. Shahin, K., S. Blake & E.-S. Kim (eds.), *Proceedings of WCCFL 17*. CSLI, Stanford, pp. 59-73.
- Cardinaletti, A. & M. Starke (1994). The typology of structural deficiency. On the grammatical classes. Ms, Universities of Venice and Geneva.

- Cardinaletti, A. & M. Starke (1995). Deficient pronouns: A view from Germanic, A study in the unified description of Germanic and Romance. Ms, Universities of Venice and Geneva.
- Cardinaletti, A. & M. Starke (1999). The typology of structural deficiency: A case study of the three classes of pronouns. Riemsdijk, H. van (ed.), *Clitics in the languages of Europe*. Mouton de Gruyter, Berlin, pp. 141-228.
- Chomsky, N. (1993). A minimalist program for linguistic theory. Hale, K. & S.J. Keyser (eds.), *The view from building 20*, MIT Press, Cambridge, MA, pp. 1-52.
- Craenenbroeck, J. van & M. van Koppen (2000). On the pronominal system of Dutch dialects., Ms, Leiden University.
- Craenenbroeck, J. van & M. van Koppen (in press). Two types of pronominal doubling in southern Dutch. Cornips, L. & S. Barbiers (eds.), *Syntactic microvariation*. Meertens Institute Amsterdam.
- Geest, W. de (1995). Cliticisation and Clitic Doubling in East Flemish. *The Berkeley Conference on Dutch Linguistics 1993, Dutch Linguistics in a Changing Europe*. University Press of America, Lanham, pp. 151-170.
- Grohmann, K. (2000). Towards a syntactic understanding of prosodically reduced pronouns. *Theoretical Linguistics* 25, pp. 149-184.
- Haegeman, L. (1986). The double object construction in West Flemish. *The Linguistic Review* 5, pp. 281-300.
- Haegeman, L. (1990). Subject pronouns and subject clitics in West Flemish. *The Linguistic Review* 7, pp. 333-363.
- Haegeman, L. (1991). Subject clitics and clitic doubling in West Flemish. Riemsdijk, H. van & L. Rizzi (eds.), *Clitics and their host*, Grammatical Models, Tilburg.
- Haegeman, L. (1992). *Theory and description in Generative Grammar: A case study of West Flemish*. Cambridge University Press, Cambridge.
- Haegeman, L. (1993). The morphology and distribution of object clitics in West Flemish. *Studia Linguistica* 43, pp. 57-94.
- Hoekstra, E. & J.W. Zwart (1994). De structuur van de CP. Functionele projecties voor topics en vraagwoorden in het Nederlands. *Spektator* 23, pp. 191-212.
- Hoekstra, E. & J.W. Zwart (1997). Weer functionele projecties. *Nederlandse Taalkunde* 2, pp. 121-132.
- Kayne, R. (1994). *The Antisymmetry of syntax*. MIT press, Cambridge, MA.
- Koopman, H. & D. Sportiche (1991). The position of subjects. *Lingua* 85, pp. 211-258.
- Laenzlinger, C. (1998). *Comparative studies in word order variation: Adverbs, pronouns and clause structure in Romance and Germanic*. John Benjamins, Amsterdam.
- Milsark, G.L. (1979). *Existential sentences in English*. Garland, New York, London.
- Sportiche, D. (1995). Clitic constructions. Rooryck, J. & L. Zaring (eds.), *Phrase structure and the lexicon*, Kluwer, Dordrecht, Boston, London, pp. 213-276.
- Uriagereka, J. (1995). Aspects of clitic placement in Western Romance. *Linguistic Inquiry* 26, 79-124.
- Zwart, J.W. (1993). *Dutch syntax: A minimalist approach*, Diss, University of Groningen.
- Zwart, J. W. (1997). *Morphosyntax of verb movement: A minimalist approach to the syntax of Dutch*. Kluwer, Dordrecht.
- Zwarts, F. (1981). Negatief polaire uitdrukkingen I. *Glott* 4, pp. 35-132.

Reanalyzing reconstruction effects

An optimality-theoretic account of the relation between
pronouns and R-expressions

Silke Fischer

This paper presents an optimality-theoretic account of the relation between pronouns and R-expressions which offers a new way of analyzing apparent Principle C effects in so-called reconstruction contexts. It is argued that this phenomenon can be dealt with in syntax in the course of the derivation. The basic assumption is that the relevant binding principles are violable constraints that are checked in local optimization procedures after the completion of each phrase. Thus, ungrammatical structures are ruled out immediately during the derivation, and reconstruction in the traditional sense might be a superfluous mechanism.

1. Introduction

It is a well-known fact that pronouns must not overtly c-command coreferent R-expressions, since this configuration violates Principle C of the binding theory. However, things become more complicated if subsequent movement of the phrase containing the R-expression dissolves this configuration (cf. 1).

(1) [_{XP} ... R-expression₁ ...] ... pronoun₁ ... t_{XP}

As the contrast between (2) and (3) shows, the resulting structure may be well-formed, as in (2), or ungrammatical, as in (3). (English and German behave alike in these examples.)

- (2) a. Which claim that John₁ made did he₁ later deny t?
b. Welche Behauptung, die Hans₁ gemacht hat, hat er₁
which claim that John made has has he
später t bestritten?
later denied
- (3) a. *Which picture of John₁ does he₁ like t?

- b. *Welches Foto von Hans₁ mag er₁ t?
 which picture of John likes he

What has often been assumed is that this contrast crucially depends on the argument-adjunct distinction (cf., among others, Lebeaux 1988, 1990, Chomsky 1993, 1995, Epstein *et al.* 1998, Fox 1999, 2000). The general prediction of this kind of analysis is the following: If the R-expression is embedded in an adjunct, the sentence is predicted to be grammatical (cf. 2), whereas if it is part of an argument, the sentence is predicted to be ill-formed (cf. 3). The argument-adjunct approach is based on the standard assumption that adjuncts, unlike arguments, can be inserted noncyclically into the derivation (cf. Lebeaux 1988, who originally came up with this proposal). Thus, sentences involving adjuncts can avoid a Principle C configuration from the beginning by late merge. Before movement takes place, the pronoun does not c-command the R-expression, because the adjunct containing the latter has not been inserted yet, and after movement, the c-command relation between pronoun and R-expression no longer holds anyway.

This analysis can account for the contrast between (2) and (3), but as the numerous counterexamples presented in the next section illustrate, it also faces severe problems and thus does not really provide a satisfactory answer. Therefore I will propose an alternative analysis that is based on the observation that it is basically the kind of embedding of the R-expression that determines whether a reconstruction sentence is well-formed or not.

2. Remarks on the argument-adjunct distinction

Let us first take a look at the empirical counterevidence against the argument-adjunct approach (cf. also Müller 1995, Kuno 1997, Lasnik 1998, Safir 1999). As examples like (4) and (5) illustrate, there are sentences where the R-expression is contained in an adjunct, but which are still ungrammatical. In order to rescue the analysis, it would have to be assumed that in these examples late merge of the adjunct is not an available option for some reason or other.

- (4) *In Ben₁'s office he₁ lay on the desk.
 (5) *Wegen Peters₁ Mutter blieb er₁ weg.
 because of Peter's mother stayed he away
 'because of his mother, Peter stayed away.'

However, what is even worse for the argument-adjunct approach is that there are also grammatical sentences where the R-expression is contained in an argument, as illustrated in the following examples.

- (6) Which piece of evidence that John₁ was guilty did he₁ successfully refute?

- (7) Whose claim that the Senator₁ had violated the campaign finance regulations did he₁ dismiss as politically motivated?
- (8) That John₁ had seen the movie he₁ never admitted.
- (9) Welches Argument (dafür), dass Hans₁ am besten geeignet ist, which argument (for it) that John at best suitable is hat er₁ schließlich akzeptiert? has he finally accepted
'Which argument that John is the best man for it did he finally accept?'
- (10) Wessen Behauptung, dass Bärbel₁ Roman geschlagen habe which claim that Bärbel Roman beaten has hat sie₁ als Verleumdung zurückgewiesen? has she as slander dismissed
'Whose claim that Bärbel had beaten Roman did she dismiss as slander?'
- (11) Dass Hans₁ verloren hat, hat er₁ mir natürlich verschwiegen. that John lost has has he me of course not told
'That John had lost he did not tell me of course.'
- (12) Marias Behauptung, dass Peter₁ faul sei, bestreitet er₁ Mary's claim that Peter lazy would be denies he natürlich vehement. of course vehemently
'Mary's claim that Peter was lazy he denies vehemently of course.'
- (13) Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert. Mary's punishment for Peter's being late has he accepted
'Peter accepted Mary's punishment for his being late.'

According to the argument-adjunct approach, it would have to be assumed that arguments must be inserted cyclically into the derivation and that a resulting Principle C configuration is fatal. However, on these assumptions the data in (6)-(13) are clear counterevidence for the analysis sketched above. Thus it must be concluded that it cannot be the argument-adjunct distinction that accounts for reconstruction effects.¹

¹ Some of the ungrammatical sentences that are supposed to show that a sentence is ill-formed because the R-expression is contained in an argument seem to be deviant for independent reasons; cf., for instance, the following example, which is pragmatically strange anyway (as observed, for example, in Heycock 1995 and Lasnik 1998).

(i) *Which claim that John₁ was asleep was he₁ willing to discuss?

3. Analysis

3.1. Background

What we have seen so far is that the distinction between grammatical and ungrammatical reconstruction sentences cannot be put down to the argument-adjunct asymmetry. But still we find the asymmetrical pattern that sometimes an underlying Principle C configuration leads to ungrammaticality, while other sentences of that type are fully grammatical. The conclusion that suggests itself is that Principle C must be violable, that is, the phenomenon lends itself to an optimality-theoretic analysis, in which constraints are violable by definition. Thus it can be assumed that although Principle C is violated in all of the sentences considered so far, only in some of them does the violation lead to ungrammaticality. But the question that arises next is what it is that the grammatical reconstruction sentences have in common and that distinguishes them from the ungrammatical ones.

It has already been observed earlier in the literature that the depth of embedding plays a crucial role in determining the grammaticality of reconstruction sentences (cf., among others, van Riemsdijk & Williams 1981, Huang 1993). In fact, what the well-formed sentences seem to have in common is that the R-expression is relatively deeply embedded. In many cases it is embedded in a CP (cf., for instance, 2, 6-12), but as (13) (repeated in 14a) shows, this is not obligatory. Interestingly, (14a) becomes considerably worse if *Marias Strafe* ('Mary's punishment') is replaced with *die Strafe* ('the punishment'), as illustrated in (14b).

- (14) a. *Marias Strafe für Peters₁ Zuspätkommen hat er₁*
 Mary's punishment for Peter's being late has he
 akzeptiert.
 accepted
 'Peter accepted Mary's punishment for his being late.'
- b. **Die Strafe für Peters₁ Zuspätkommen hat er₁*
 the punishment for Peter's being late has he
 akzeptiert.
 accepted
 'Peter accepted the punishment for his being late.'
- c. **Er₁ hat Marias Strafe für Peters₁ Zuspätkommen*
 he has Mary's punishment for Peter's being late
 akzeptiert.
 accepted
 'Peter accepted Mary's punishment for his being late.'

If (14a) is compared to (14b) at the point in the derivation before movement takes place, the following difference can be observed. In (14a), *er* binds *Peter*, but the R-expression is not bound in its binding domain, since *Maria* is an intervening subject. This seems to be the relevant property that rescues the

sentence,² because in (14b) the pronoun binds the R-expression in its binding domain, which seems to be much worse.

As far as (14c) is concerned, it has the same underlying structure as (14a). However, it still violates Principle C after movement has taken place, which is fatal. On the other hand, the underlying structure of (14a) shows that Principle C can be violated in the course of the derivation. Thus I propose an optimality-theoretic analysis that does not hinge on the argument-adjunct distinction (and so I will no longer take into account the option of late merge either), but rather on the question in which domain the R-expression is bound in the course of the derivation.

As far as the theoretical assumptions that underly my analysis are concerned, I assume that syntactic structure is built up derivationally (cf. Chomsky 1995, 1999), and that it is subject to repeated local optimization as proposed in Heck & Müller (2000) or Fanselow & Āavar (2000). In particular, I propose that optimization takes place after the completion of each phrase.

Moreover, for the analysis to work it is necessary that vP-internal phrases that move later in the derivation do not have to move to the edge of vP in order to be accessible. Unlike Chomsky (1999) I will therefore not assume that vPs are phases (only CPs are). (At least it must be assumed that the Phase Impenetrability Condition only applies to CPs.) These assumptions are relevant for the derivation of sentences like (14b), as will be illustrated in the next section.

Finally, I assume that the input for the first optimization process is selected from the numeration, which also contains the indices. Later in the derivation the optimal output of the preceding optimization process plus further items from the numeration serve as input for the following optimization.

3.2. The derivation of (14a) and (14b)

In order to derive sentences like (14a) and (14b), the following constraints have to be introduced.

- (15) PRINCIPLE B* (Pr.B*):
Non-anaphors must not be bound in their binding domain.³
- (16) FAITH REFERENCE (FR):
If two NPs are coindexed in the input, they must also be coindexed in the output.
- (17) PRINCIPLE C (Pr.C):
R-expressions must be free.

² Note that with anaphors we find the opposite effect; cf. the Specified Subject Condition.

³ That Principle B of the binding theory should be extended to non-anaphors in general has also been proposed in Kuno (1987) and Sternefeld (1993).

T₁ and T₂ illustrate the derivation of (14a): *Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert*. The only difference between the two candidates in T₁ concerns the index of the subject pronoun, which has been changed in the second candidate, O₂. This change, however, results in a fatal violation of FAITH REFERENCE, thus candidate O₁ wins in T₁.

T₁: vP optimization

Input: [_{VP} Marias Strafe für Peters ₁ Z. akz.], {er ₁ , ...}	Pr.B*	FR	Pr.C
⇒ O ₁ : [_{VP} er ₁ [_{VP} Marias Strafe für Peters ₁ Z. akz.]]			*
O ₂ : [_{VP} er ₂ [_{VP} Marias Strafe für Peters ₁ Z. akz.]]		*!	

What is important to note is that once a structure has been optimized, this part of the derivation cannot be changed anymore. Thus later in the derivation, when CP is optimized (cf. T₂), it is no longer possible to change the index of the subject pronoun. There is only the option of moving either the object or the subject to SpecC. However, in the latter case PRINCIPLE C is fatally violated (cf. O₂), thus the candidate involving topicalization of the object NP wins in T₂.

T₂: CP optimization (simplified illustration)

Input: [_{TP} er ₁ [_{VP} t [_{VP} [_{NP} ... Peters ₁ Z.] akz.]] hat], ...	Pr.B*	FR	Pr.C
⇒ O ₁ : [_{CP} [_{NP} ... Peters ₁ Z.] [_{C'} hat [_{TP} er ₁ [_{VP} t [_{VP} t akz.]] t]]]			
O ₂ : [_{CP} Er ₁ [_{C'} hat [_{TP} t [_{VP} t [_{VP} [_{NP} ... Peters ₁ Z.] akz.]] t]]]			*!

T₃ illustrates the derivation of (14b): **Die Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert*. Here the situation is as follows. When vP is optimized, the first candidate fatally violates PRINCIPLE B*. So already at this point in the derivation candidate O₁ is ruled out, and the index of the subject pronoun is changed.

T₃: vP optimization

Input: [_{VP} die Strafe für Peters ₁ Z. akzeptiert], {er ₁ , ...}	Pr.B*	FR	Pr.C
O ₁ : [_{VP} er ₁ [_{VP} die Strafe für Peters ₁ Z. akzeptiert]]	*!		*
⇒ O ₂ : [_{VP} er ₂ [_{VP} die Strafe für Peters ₁ Z. akzeptiert]]		*	

In T₃ it also becomes clear why it is necessary to adopt a *local* optimization approach and why vPs must not count as phases (at least if the Phase Impenetrability Condition is adopted without further modification). If vP were a phase, the object NP would have to move to its specifier position in order to be accessible for further movement transformations (like topicalization in the sentences under discussion). However, in the resulting configuration PRINCIPLE B* would no longer be violated, which means that the violation of PRINCIPLE B* would not be taken into account when optimization would take place, and thus (14b) could no longer be distinguished from (14a). Exactly the same argument would hold if a global optimization approach were adopted, as illustrated in T₄.

T₄: Global optimization: wrong prediction

	Pr.B*	FR	Pr.C
⇒ *O ₁ : [_{CP} Die S. f. Peters ₁ Z. hat [_{TP} er ₁ [_{VP} t [_{VP} t akz.]] t]]			
O ₂ : [_{CP} Die S. f. Peters ₁ Z. hat [_{TP} er ₂ [_{VP} t [_{VP} t akz.]] t]]		*!	

Here again the fatal PRINCIPLE B* configuration would no longer hold at the point when the structure is optimized, and the first candidate would incorrectly be predicted to be optimal. The general conclusion that can be drawn is that the constraints must be checked before the fatal configurations are dissolved by further movement transformations, and thus local optimization is crucial.

As far as T₂ is concerned, it has already been mentioned that it is only a simplified illustration of CP optimization. Strictly speaking, at this point in the derivation another constraint, LAST RESORT, becomes relevant. However, this constraint has not been taken into account yet, because it has not played a crucial role in the derivation of the sentences above.

- (18) LAST RESORT (LR):
Movement must be feature-driven.

Since T₂ illustrates the derivation of sentence (14a) (*Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.*), it can be assumed that the object NP has a [+top] feature, whereas the subject NP is not associated with any feature that would motivate movement of the subject pronoun to SpecC. Thus, O₂ in T₂ has at least one further constraint violation: it violates LR. This fact is worth mentioning because the distribution of LAST RESORT violations is basically the only difference between the derivations of sentences like (14a) and (14c).

3.3. The derivation of Principle C effects that survive movement

In the previous section, the two reconstruction sentences (14a) and (14b) have been derived. What is left to show is how ‘normal’ Principle C effects as in (14c) (**Er₁ hat Marias Strafe für Peters₁ Zuspätkommen akzeptiert.*) can be accounted for within this approach.

Considering again the candidates in T₂, it can be seen that (14c) basically corresponds to the second candidate in this competition, which loses against the candidate involving topicalization. Thus it seems reasonable to assume that sentences like (14c) are generally beaten by the candidate in which the object is topicalized (cf. also the notion of Free Topicalization in Chomsky 1999:25, 39). However, the competition that aims at deriving (14c) differs from the one in T₁ and T₂ insofar as the object NP is marked [+top] only in the latter case, i.e., topicalization in the derivation of (14c) induces an additional violation of LAST RESORT. But since topicalization of the object should be the preferred option nevertheless, it must be concluded that a violation of LAST RESORT is cheaper than a PRINCIPLE C violation, i.e., Pr.C >> LR.

T₅ illustrates the derivation of (14c): *Er₁ hat Marias Strafe für Peters₁ Zuspätkommen akzeptiert. At the point in the derivation when CP is optimized, the candidate involving topicalization wins despite of its LAST RESORT violation, because the PRINCIPLE C violation of the second candidate is worse.

T₅: CP optimization

Input: [TP er ₁ ...[VP [NP [-top]...Peters ₁ Z.]...],...]	Pr.B*	FR	Pr.C	LR
⇒ O ₁ : [CP [NP [-top]...Peters ₁ Z.]...[TP er ₁ ...]]				*
O ₂ : [CP Er ₁ ...[VP [NP [-top]...Peters ₁ Z.]...]]			*!	

But if topicalization takes place in the derivation above in order to avoid a PRINCIPLE C violation, the question arises as to why the object NP is not moved over the pronoun in vP already. That is, why is the following phrase not the optimal output of vP optimization?

- (19) [_{vP} Marias Strafe für Peters₁ Zuspätkommen [_{v'} er₁ [_{vP} t akzeptiert]]]]

The problem that would arise if this were the case is the following. Sentences like (14b) (*Die Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.) could no longer be excluded, since PRINCIPLE B*, which rules out (14b), would no longer be violated when vP optimization takes place (cf. also the discussion above). Thus, (19) must be ruled out as a possible derivation.

This can be achieved if it is assumed that there is a general requirement that German pronouns move to the left edge of vP and do not allow any vP-internal non-pronominal overt material in front of them (cf. Müller 2000). That is, pronouns do not only want to be at the left edge of vP, but also at its phonological border. The following example corroborates this assumption. The German sentences in (20b) and (20c) contain double object constructions in which the direct object is pronominal, whereas the indirect object is not. Although the linear order indirect object-direct object is generally available (cf. 20a), object shift is obligatory if the second object is pronominalized, as the contrast between (20b) and (20c) shows.

- (20) a. Ich denke, dass [TP Hans [_{vP} Maria den Brief gegeben hat]]
 I think that John Mary the letter given has
 'I think that John gave Mary the letter.'
 b. *Ich denke, dass [TP Hans [_{vP} Maria ihn gegeben hat]]
 I think that John Mary him given has
 'I think that John gave it to Mary.'
 c. Ich denke, dass [TP Hans [_{vP} ihn Maria gegeben hat]]
 I think that John him Mary given has
 'I think that John gave it to Mary.'

If it is assumed that the constraint that captures this observation is higher ranked than FAITH REFERENCE,⁴ the candidate in (19) is ruled out immediately.

- (21) PRONOUNS AT EDGE(vP) (Pr-E(vP)):
Pronouns must occur both at the edge and at the phonological border of vP.

3.3.1. Embedded V2-clauses in German

Another question that arises is what happens if topicalization does not yield a grammatical structure either? Consider first topicalization in embedded V2-clauses in German. Here topicalization is only licensed in bridge contexts (cf. 22). This raises the question of how sentences like (22b), which involves a nonbridge verb and thus does not allow topicalization, can be ruled out.

- (22) a. Ich denke [_{CP} Marias Strafe für Peters₁ Zuspätkommen
I think Mary's punishment for Peter's being late
hat er₁ akzeptiert]
has he accepted
'I think Peter accepted Mary's punishment for his being late.'
b. *Ich bezweifle [_{CP} Marias Strafe für Peters₁
I doubt Mary's punishment for Peter's
Zuspätkommen hat er₁ akzeptiert]
being late has he accepted
'I doubt that Peter accepted Mary's punishment for his being late.'

As far as the embedded CP in (22b) is concerned, it is well-formed as such, i.e., at this point in the derivation topicalization is not ruled out yet. Rather, the candidate involving topicalization wins CP optimization and thereby rules out the candidate in which the object stays in situ, i.e., the candidate with the 'real' Principle C configuration (**Ich denke/bezweifle, er₁ hat Marias Strafe für Peters₁ Zuspätkommen akzeptiert.*). Thus it can be concluded that (22b) is not ruled out until the matrix clause is built up.

Generally speaking, it can be assumed that whatever rules out topicalization in this context is captured by a constraint that is even higher ranked than AVOID NULL PARSE (ANP) (cf. Prince & Smolensky 1993). Thus, at some point in the derivation of sentences like (22b) the null parse, \emptyset , is the winner of the competition.

⁴ The necessity to rank PRONOUNS AT EDGE(vP) higher than FAITH REFERENCE follows if sentences like (14b) (**Die Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.*) are considered, where the winning candidate of vP optimization should involve an index change (cf. T₃). In order to rule out (19), which corresponds to a potential intermediate derivation of sentence (14a), it would have been sufficient to rank PRONOUNS AT EDGE(vP) higher than PRINCIPLE C, because here the winner of vP optimization does not violate FAITH REFERENCE.

- (23) AVOID NULL PARSE (ANP):
 Ø is prohibited.

As far as the German examples in (22) are concerned, it is usually assumed that in (22a) the embedded CP is L-marked and therefore no barrier for government, whereas the embedded CP in (22b) is not L-marked and thus blocks government by the embedding verb (cf., among others, Haider 1984, Kayne 1984, Cinque 1990, Frampton 1990, Kroch & Iatridou 1992). So it could be assumed that the following constraint captures this observation.

- (24) C_[+top]:
 C_[+top] must be minimally c-commanded by a governing head.⁵
- (25) *Extended ranking*:
 C_[+top] >> AVOID NULL PARSE >> PRONOUNS AT EDGE(vP),
 PRINCIPLE B* >> FAITH REFERENCE >> PRINCIPLE C >>
 LAST RESORT

To come back to example (22b) (**Ich bezweifle, Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.*), it can now be derived in the following way. When the matrix VP is optimized, the first candidate violates the highly ranked C_[+top] constraint, thus the null parse wins. So after having won the embedded CP optimization, the candidate involving topicalization can itself be ruled out in the next optimization process. T₆ illustrates the matrix VP optimization (only the two decisive constraints are taken into account).

T₆: Optimization of the matrix VP

Input: [CP [NP [+top] Marias Str. für Peters ₁ Z.]... [TP er ₁]], ...	C[+to]	ANP
O1: [VP bezweifle [CP [NP [+top]...Peters ₁]	*!	
⇒ O2: Ø		*

3.3.2. Embedded that-clauses in German

What is still unclear is how sentences like the ones in (26) can be ruled out, because - in contrast to embedded V2-clauses - topicalization in embedded *that*-clauses is not possible in German, as illustrated in (27).⁶

⁵ Strictly speaking, C_[+top] does not only apply if the feature [+top] is involved but also if topicalization to SpecC induces a violation of LAST RESORT.

⁶ In contrast to English, topicalization to SpecT (between *dass* ('that') and the subject) is not possible in German. I assume that this possibility is ruled out by a high ranked constraint that might prohibit multiple TP specifiers in German in general.

- (26) a. *Ich denke, dass er₁ Marias Strafe für Peters₁
 I think that he Mary's punishment for Peter's
 Zuspätkommen akzeptiert hat.
 being late accepted has
 'I think that Peter accepted Mary's punishment for his being late.'
- b. *Ich bezweifle, dass er₁ Marias Strafe für Peters₁
 I doubt that he Mary's punishment for Peter's
 Zuspätkommen akzeptiert hat.
 being late accepted has
 'I doubt that Peter accepted Mary's punishment for his being late.'
- (27) *Ich denke, Marias Strafe dass er akzeptiert hat.
 I think Mary's punishment that he accepted has
 'I think that he accepted Mary's punishment.'

Let's assume that the following constraint captures this observation.

- (28) DOUBLY FILLED COMP FILTER (DCF):
 Overt complementizers must be at the phonological border of CP.

If it is further assumed that embedded *that*-clauses and embedded V2-clauses are candidates in the same competition, the sentences in (26) can also be ruled out because they lose against a candidate involving topicalization, namely the V2-candidate in which the object is topicalized. (29) is introduced as further constraint in order to punish those candidates that are unfaithful to the input.

- (29) FAITH LEX (FL):
 Realize exactly the lexical material that is present in the input.

T₇ illustrates the relevant competition. When the embedded CP is optimized, four candidates fatally violate PRINCIPLE C, and the third candidate is ruled out by the DOUBLY FILLED COMP FILTER. The only candidate that does not violate either of these two constraints is O₆, the V2-candidate with topicalization of the object.

T₇: Optimization of the embedded CP

Input: [_{TP} er ₁ [_{VP} t [_{VP} Marias Str. für Peters ₁ Z. akz.]] hat], {dass,...}	Pr.C	DCF	FL
O ₁ : [_{CP} dass [_{TP} subj ₁ [_{VP} t [_{VP} obj ₁]] V _{fin}]]	*!		
O ₂ : [_{CP} subj ₁ dass [_{TP} t [_{VP} t [_{VP} obj ₁]] V _{fin}]]	*!	*	
O ₃ : [_{CP} obj ₁ dass [_{TP} subj ₁ [_{VP} t [_{VP} t]] V _{fin}]]		*!	
O ₄ : [_{CP} V _{fin} [_{TP} subj ₁ [_{VP} t [_{VP} obj ₁]] t]]	*!		*
O ₅ : [_{CP} subj ₁ V _{fin} [_{TP} t [_{VP} t [_{VP} obj ₁]] t]]	*!		*
⇒ O ₆ : [_{CP} obj ₁ V _{fin} [_{TP} subj ₁ [_{VP} t [_{VP} t]] t]]			*

As far as the sentences in (26) are concerned, (26a) is ruled out because the embedded V2-clause O_6 has a better constraint profile when the embedded CP is optimized. Thus the derivation that wins corresponds to sentence (22a): *Ich denke, Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.*

When (26b) is derived, the situation is as follows. At the point in the derivation when the embedded CP is optimized, embedded topicalization is the preferred option as well (i.e., the winner is a V2-candidate). But when the matrix VP is optimized, the derivation crashes because it loses against the null parse, in analogy to the derivation of (22b): **Ich bezweifle, Marias Strafe für Peters₁ Zuspätkommen hat er₁ akzeptiert.*

4. Outlook

What is interesting is that ill-formed reconstruction sentences improve if a relative or complement clause is inserted in the NP that contains the coindexed R-expression (cf. 30, 31). This is unexpected since the additional CP does not seem to intervene syntactically between the pronoun and the R-expression in any relevant way.

- (30) a. *Die Strafe für Peters₁ Zuspätkommen hat er₁
 the punishment for Peter's being late has he
 akzeptiert.
 accepted
 'Peter accepted the punishment for his being late.'
- b. Die Strafe für Peters₁ Zuspätkommen, die Maria
 the punishment for Peter's being late that Mary
 sich ausgedacht hat, hat er₁ akzeptiert.
 REFL thought up has has he accepted
 'Peter accepted the punishment for his being late that Mary had
 thought up.'
- (31) a. *Marias₁ Aussage hat sie₁ inzwischen zurückgenommen.
 Mary's statement has she meanwhile taken back
 'Meanwhile, Mary has taken back her statement.'
- b. ?Marias₁ Aussage, dass Peter erst nach 11 Uhr
 Mary's statement that Peter only after 11 o'clock
 heimgekommen sei, hat sie₁ inzwischen zurückgenommen.
 come home would be has she meanwhile taken back
 'Meanwhile, Mary has taken back her statement that Peter had come
 home only after 11 o'clock.'

The contrasts in (30) and (31) indicate that there are probably more factors involved than those discussed so far.⁷ A detailed analysis of these data would

⁷ As Peter Sells pointed out to me, logophoricity might play a crucial role here.

be beyond the scope of this paper, but I still want to mention some aspects of this observation.

First, it should be pointed out that these data provide further evidence that the argument-adjunct approach is on the wrong track. If the a-sentences are ungrammatical because the R-expression is embedded in an argument and thus causes a Principle C violation, it is completely unclear why the b-sentences should be any better. However, in an optimality-theoretic analysis it is much easier to integrate all kinds of different factors that seem to have an impact on the construction under discussion.

Moreover, the contrast in (32) shows that the additional factors that are relevant in sentences like (30b) or (31b) are compatible with a derivational approach. In (32b) material has also been inserted between the R-expression and the pronoun, but the sentence remains ill-formed. The difference between (32a) and (32b) is that only in the a-sentence the additional material (a relative clause in this case) is present in the VP before movement takes place. In (32b) parentheticals have been inserted, which are not base-generated VP-internally. So it can be concluded that the relevant material that rescues sentences like (32a) is already visible at the point in the derivation when the subject pronoun is inserted and the decision in favour of or against coindexation must be made.

- (32) a. Die Strafe für Peter₁, die Maria sich ausgedacht
 the punishment for Peter that Mary REFL thought up
 hat, hat er₁ akzeptiert.
 has has he accepted
 ‘Peter accepted the punishment for himself that Mary had thought up.’
- b. *Die Strafe für Peter₁, das weiss ich von Maria, hat
 the punishment for Peter, that know I from Mary, has
 er₁ akzeptiert.
 he accepted
 ‘The punishment for himself, I know that from Mary, Peter accepted.’

5. Conclusion

According to the analysis presented above, the situation is as follows. Whether reconstruction sentences are well-formed or not is generally determined in the course of the syntactic derivation by local optimization procedures. Thus, using the term ‘reconstruction effects’ for the asymmetries that can be observed is actually misleading, because the ill-formed sentences are already excluded before the so-called reconstruction would take place.

Acknowledgements

I would like to thank Gereon Müller, Peter Sells, Wolfgang Sternefeld, Sten Vikner, the audiences at ConSOLE 9 (University of Lund) and WOTS 4

(University of Stuttgart), and everyone else who provided me with helpful comments.

References

- Chomsky, N. (1993). A minimalist program for linguistic theory. Hale, K. & S.J. Keyser (eds.), *The view from building 20*. MIT Press, Cambridge, MA, pp. 1-52.
- Chomsky, N. (1995). *The minimalist program*. MIT Press, Cambridge, MA.
- Chomsky, N. (1999). Derivation by phase. *MIT Occasional Papers in Linguistics* 18. MIT, Cambridge, MA.
- Cinque, G. (1990). *Types of A'-dependencies*. MIT Press, Cambridge, MA.
- Epstein, S.D., E.M. Groat, R. Kawashima & H. Kitahara (1998). *A derivational approach to syntactic relations*. Oxford University Press, Oxford.
- Fanselow, G. & D. Čavar (2000). Remarks on the economy of pronunciation. Müller, G. & W. Sternefeld (eds.), *Competition in syntax*. Mouton de Gruyter, Berlin, pp. 107-150.
- Fox, D. (1999). Reconstruction, binding theory, and the interpretation of chains. *Linguistic Inquiry* 30, pp. 157-196.
- Fox, D. (2000). *Economy and semantic interpretation*. MIT Press, Cambridge, MA.
- Frampton, J. (1990). Parasitic gaps and the theory of *wh*-chains. *Linguistic Inquiry* 21, pp.49-77.
- Haider, H. (1984). Topic, focus, and V-second. *Groninger Arbeiten zur Germanistischen Linguistik* 25, pp. 72-120.
- Heck, F. & G. Müller (2000). Repair-driven movement and the local optimization of derivations. Ms., Universität Stuttgart & IDS Mannheim.
- Heycock, C. (1995). Asymmetries in reconstruction. *Linguistic Inquiry* 26, pp. 547-570.
- Huang, C.-T.J. (1993). Reconstruction and the structure of VP: some theoretical consequences. *Linguistic Inquiry* 24, pp. 103-138.
- Kayne, R. (1984). *Connectedness and binary branching*. Foris, Dordrecht.
- Kroch, A. & S. Iatridou (1992). The licensing of CP-recursion and its relevance to the Germanic verb-second phenomenon. *Working Papers in Scandinavian Syntax* 50, pp. 1-24.
- Kuno, S. (1987). *Functional syntax*. The University of Chicago Press, Chicago.
- Kuno, S. (1997). Binding theory in the minimalist program. Ms, Harvard University, Cambridge, MA.
- Lasnik, H. (1998). Some reconstruction riddles. *Proceedings of the Penn Linguistics Colloquium*, University of Pennsylvania, Philadelphia.
- Lebeaux, D. (1988). *Language acquisition and the form of the grammar*. Diss, University of Massachusetts, Amherst.
- Lebeaux, D. (1990). Relative clauses, licensing, and the nature of the derivation. *Proceedings of NELS 20*, pp. 318-332.
- Müller, G. (1995). Anti-Rekonstruktion. Talk presented at Universität Tübingen.
- Müller, G. (2000). Harmonic alignment and the hierarchy of pronouns in German. Ms, IDS Mannheim.
- Müller, G. & Sternefeld, W. (1993). Improper movement and unambiguous binding. *Linguistic Inquiry* 24, pp. 461-507.
- Prince, A. & P. Smolensky (1993). Optimality theory. Constraint interaction in generative grammar. Ms, Rutgers University, New Brunswick & University of Colorado, Boulder.
- Riemsdijk, H. van & E. Williams. (1981). NP-structure. *The Linguistic Review* 1, pp. 171-217.
- Rizzi, L. (1986). On chain formation. Borer, H. (ed.), *The Syntax of pronominal clitics*. Academic Press, New York, 65-95.
- Safir, K. (1999). Vehicle change and reconstruction in A'-chains. *Linguistic Inquiry* 30, pp. 587-620.
- Sternefeld, W. (1993). Anaphoric reference. Jacobs, J., A. von Stechow, W. Sternefeld & T. Vennemann (eds.), *Syntax, vol. I*. De Gruyter, Berlin, pp. 940-966.

Bound variable interpretation and the degree of accessibility

Takaaki Hara

Natural languages permit the use of different lexical items to encode a bound variable interpretation. However, it is not the case that one can freely use any of these lexical items to establish a bound variable reading. I claim that the choice of the appropriate lexical item follows from accessibility theory (Ariel 1990, 1991, 1994). Specifically, the structural distance between a dependent term and its antecedent QP at LF plays a role in the relative availability of a bound variable reading for different lexical items, the relevance of which can be gleaned by observing Japanese data.

1. Introduction

Natural languages employ different kinds of lexical items for a bound variable interpretation. For example, it is generally agreed that both pronominals and reflexives in English can be construed as bound variables, as shown in (1) and (2), and yet an expression like *that NP* can also be claimed to yield a bound variable interpretation. Observe (3).

- (1) a. Every boy_i wonders what he_i will become in the future.
b. $(\forall x: \text{boy}(x)) (x \text{ wonders what } x \text{ will become in the future})$
- (2) a. Every girl_i believes in herself_i.
b. $(\forall x: \text{girl}(x)) (x \text{ believes in } x)$
- (3) (Noguchi 1997: 785; originally from Evans 1977)
Every logician_i was walking with a boy near that logician_i's house.

Japanese also allows several options for a bound variable interpretation. A so-called anaphor *zibun* ‘self’ and a zero pronoun can readily induce a bound variable reading:¹

- (4) Daremo_i- gazibun_i-no/ec_i ryoosin-ni kansyasi-te i-ru.
 everyone-NOM self-GEN parents-DAT gratitude do-NF be-NPST
 ‘Everyone is grateful to self’s parents.’

Just like in English, an NP headed by *sono* ‘that’ can be used to express a bound variable reading as well (Nishigauchi 1986; Hoji 1991; Noguchi 1997):

- (5) Dono kaisya_i-mo sono kaisya_i-no seihin- home-ru.
 every company-too that company-GEN product-ACC praise-NPST
 ‘Every company praises that company’s products.’ (Noguchi 1997: 786)

Moreover, contrary to the standard observation, Japanese third person pronouns *kare* ‘he’ and *kanozzyo* ‘she’ can be bound by a quantifier phrase (QP) under certain conditions (cf. Hoji et al. 1999; Hara 2000). For instance, despite the standard observation as in (6), example (7) allows a bound variable reading of *kanozzyo*.

- (6) *Daremo_i-ga [kare_i-ga tukut-ta] omotya-o kowasi-ta.
 everyone-NOM he-NOM make-PAST toy-ACC break-PAST
 ‘Everyone broke the toy that he made.’ (Hoji 1991: 287)
- (7) [Sono ondai-ni hait-ta] zyosi gakusei-no daremo_i-ga
 that music.college-to enter-PAST female student-GEN everyone-NOM
 [kanozzyo_i-no sainoo-o mottomo yoku hikidasi-te kure-ru]
 she-GEN talent-ACC most fully bring.out-NF
 do.the.favour-NPST
 sensei-ni dea-e-ta.
 teacher-DAT meet-can-PAST
 ‘Every female student who entered that music college was able to meet a teacher who could bring out her talent to the full extent.’

Thus, in Japanese a bound variable interpretation can be obtained by using the following four means: a so-called anaphor *zibun*, a zero pronoun, an NP headed by *sono* (and its morphologically related forms) and a third person pronoun.

However, it is not the case that all of these expressions (dependent terms hereafter) can induce a bound variable reading with equal likelihood. As noted above, *zibun* and a zero pronoun can readily yield a bound variable reading,

¹ In this paper I use the following abbreviations for the glosses: ACC: accusative; COMP: complementiser; DAT: dative; GEN: genitive; NF: non-finite; NOM: nominative; NPST: non-past tense; PAST: past tense; Q: question marker; TOP: topic.

and yet a third person pronoun in Japanese does not easily allow such an interpretation. In English, too, there is a clear difference between a pronominal and *that NP*. Thus, even though *that boy* in (8a) can be construed as a bound variable, such an interpretation is quite hard or impossible for (8b). But notice that there is no such restriction in the case of a pronominal.

- (8) a. Every boy_i dates a girl who adores that boy_i. (Noguchi 1997: 785)
 b. *Every boy_i likes that boy_i's girlfriend.
- (9) a. Every boy_i dates a girl who adores him_i.
 b. Every boy_i likes his_i girlfriend.

In this paper I wish to provide an answer to the question as to why there is such a difference in the availability of a bound variable interpretation for different dependent terms. Specifically, I would like to suggest that accessibility theory proposed in Ariel (1990, 1991, 1994, and the references cited therein) for discourse anaphora can be naturally applied to the issue of a bound variable interpretation as well.

The organisation of the paper is as follows: in the following section I will provide an overview of accessibility theory. In section 3 I will present an analysis of a bound variable interpretation for different dependent terms. Due to the limitation of space, I will concentrate on Japanese data, though I will briefly touch upon other languages as well. Section 4 concludes the paper.

2. Accessibility theory

The central idea of accessibility theory is that some mental entities or representations are more readily retrievable than others in the addressee's memory, and the speaker uses different kinds of anaphoric expressions to help the addressee retrieve the mental entity (the antecedent for an anaphoric expression for our purposes) that the speaker intends in his utterance. Accessibility theory thus comprises two components: (i) what sort of mental entities are considered to be salient in the addressee's memory and hence highly accessible to her, and (ii) what kind of anaphoric expressions code high accessibility. With respect to the former, Ariel points out that the following are among the salient entities in a discourse (i.e. salient within the mind of the speaker/addressee):

- (10) Highly accessible antecedents
- a. mental representations of discourse participants (i.e. the speaker and the addressee)
 - b. discourse or sentence topic; the subject of a sentence

Additional factors contribute to the relative accessibility of an antecedent, too. For example, a short distance between an anaphoric expression and its antecedent usually makes the latter highly accessible. On the other hand, if

there are more than one potential antecedent for a given anaphoric expression, these antecedents will be in competition for anaphora resolution, which in effect makes them less accessible. Thus, the factors which affect the relative accessibility of an antecedent are as follows:

- (11) Factors affecting the relative accessibility of an antecedent
- a. distance
 - b. competition

The other component of accessibility theory concerns what kind of anaphoric expressions code high accessibility. Based on a corpus study of a variety of texts (both spoken and written), Ariel suggests the following hierarchy (Ariel 1994: 30):

- (12) Accessibility marking scale
- zero < reflexives < agreement markers < cliticised pronouns < unstressed pronouns < stressed pronouns < stressed pronouns + gesture < proximal demonstrative (+ NP) < distal demonstrative (+ NP) < proximal demonstrative (+ NP) + modifier < distal demonstrative (+ NP) + modifier < first name < last name < short definite description < long definite description < full name < full name + modifier

In the above hierarchy a zero form is the highest accessibility marker among all the potentially anaphoric expressions, while a full name plus a modifier is the lowest accessibility marker of all. The speaker uses a high accessibility marker when referring to a highly accessible antecedent and a lower accessibility marker for a less accessible antecedent. The addressee, then, relies on the relative degree of the accessibility marker provided by the speaker to correctly retrieve the antecedent from her memory which the speaker has intended.

Let us consider some examples as an illustration of how accessibility theory works in actual anaphora resolution. First, let us observe the following:

- (13) The feedpipe lubricates the chain, and it should be adjusted to leave a gap half an inch between itself and the sprocket. (Ariel 1994: 11; originally from Broadbent 1973)

In (13) there is more than one potential antecedent for the pronoun *it*, yet the default interpretation is that the pronoun refers to *the feedpipe* and not *the chain*. This is because the (unstressed) pronoun, a high accessibility marker, signals to the addressee to search for a highly accessible antecedent. Since the subject/topic of a sentence is more accessible than the object in a default case, *the feedpipe* is selected as the antecedent for the pronoun. Next, let us consider (14) from Ariel (1990:65).

- (14) a. Jane_i kissed Mary_j, and then she_{i/*j} kissed Harry.
 b. Jane_i kissed Mary_j, and then SHE_{*i/j} kissed Harry.

In (14b) the pronoun *she* is given stress, in which case coreference between the pronoun and *Jane* is excluded. A stressed pronoun is a lower accessibility marker than an unstressed one; hence it signals to the addressee to look for a less accessible antecedent like the object *Mary*. Accessibility theory also accounts for some of the well-known counterexamples to the standard binding theory. For instance, in the following sentences a reflexive does not have an antecedent within the sentence, and yet the first person reflexive can be used felicitously.

- (15) a. This masterpiece was written by Maya and myself/*himself.
 b. So who's advising Govorshin apart from ourselves/*themselves?
 (Ariel 1994: 35)

In accessibility-theoretic terms, the mental representations of discourse participants are among the highly accessible potential antecedents. Hence, the first person reflexive can be licensed, being anaphoric to the speaker (and the addressee), while the third person reflexive cannot be used in this way.

Following Ariel, I investigated the distribution of anaphoric expressions in a Japanese text and established a partial accessibility marking scale like the following:²

- (16) Accessibility marking scale in Japanese
zibun < zero pronouns < third person pronouns < *sono NPs*

The accessibility marking scale for Japanese is almost identical to the one Ariel proposed originally (see (12) above) except for one point. In (12) a zero form is placed as the highest accessibility marker, while in (16) it is *zibun* which occupies the highest position. As far as I know, Ariel's decision to place a zero form at the highest in the accessibility marking scale is mainly based on the behaviour of Chinese zero pronouns, and yet it does not seem likely that there has ever been an investigation with respect to the relative hierarchy between Chinese zero pronouns and *ziji* 'self'. Thus, although we need further investigation to argue conclusively, it may well be the case that an anaphor is in fact higher in the hierarchy than a zero form. At any rate, the overall congruence of the accessibility marking scales between (12) and (16) supports Ariel's claim regarding the universality of accessibility theory.

² For the analysis, I used colloquial writing that was based on the messages delivered at Sunday services at church by the author of the book: Uchida, K. (1992). *Sanjoo no sekkyoo ni miru saiwai na kurisuchan seikatsu*. Inochi no Kotoba-sha, Tokyo.

3. Accessibility theory applied to a bound variable interpretation

I wish to claim that the relative availability of a bound variable reading for different dependent terms follows from accessibility theory. Thus, in a default case the speaker selects a high accessibility marker to encode a bound variable interpretation. This is presumably due to the fact that only a very restricted syntactic configuration can license a bound variable reading (roughly, the antecedent QP needs to c-command a dependent term), and when the speaker selects an anaphoric expression to signal to the addressee that the QP is the intended antecedent in such a local domain (usually within the same sentence), he will naturally use a high accessibility marker. Moreover, the syntactic requirement of c-command for a bound variable reading makes the antecedent QP higher in the structure than a dependent term, most commonly in the spec-IP position. From the accessibility theoretic point of view, the subject position is, of course, highly accessible and a high accessibility marker will be used to establish an anaphoric relation with a DP in that position. However, if the antecedent QP is made less accessible for some reason, we predict that a lower accessibility marker can (in principle) be utilised to be anaphoric to that QP as well. We will come back to this point shortly.

We saw in section 1 that in Japanese, for instance, *zibun* and a zero pronoun can readily yield a bound variable reading. This is because they are the highest in the accessibility marking scale. Languages like Spanish and Italian have both *pro* and clitics. In these languages, then, it is these elements which are normally employed to encode a bound variable interpretation:³

(17) a. Spanish

Nadie_i cree que *pro*_i es inteligente.
 ‘Nobody believes that s/he is intelligent.’

b. Italian

Nessuno_i crede che Maria lo_i ami.
 ‘Nobody believes that Mary loves him.’

On the other hand, due to the lack of a zero or a clitic pronoun, English uses an overt pronominal and a reflexive to express the notion of a bound variable reading (the decision which form to use for a bound variable reading is regulated by binding theory):

(18) a. Every boy_i wonders what he_i will become in the future.

b. Every girl_i believes in herself_i.

As stated above, the claim that the relative availability of a bound variable reading for different dependent terms follows from accessibility theory entails that a lower accessibility marker can also be used if the antecedent QP is

³ I regard Ariel’s ‘agreement markers’ in the accessibility marking scale in (12) as the presence of *pro* in the subject position, which is responsible for a bound variable reading.

regarded as less accessible. Thus, the contrast we observed in (8), repeated here as (19), is due to the fact that a relative distance between a dependent term and its antecedent QP plays a role in judging how accessible the antecedent is. A shorter distance between the two makes it more accessible. In other words, given a lower accessibility marker like *that boy*, the addressee will search for a less accessible DP for its antecedent, and in the case of (19b) she will regard *every boy* as too prominent for *that boy* to be anaphoric to. In (19a), however, a relatively long distance between the dependent term and its antecedent makes the latter less accessible than the one in (19b), hence a bound variable reading becomes easier to obtain.

- (19) a. Every boy_i dates a girl who adores that boy_i.
 b. *Every boy_i likes that boy_i's girlfriend.
 (Noguchi 1997: 785)

In Japanese, too, I wish to claim that the reason why native speakers do not easily get a bound variable reading in cases like (20) is partly due to the fact that the antecedent QP is too prominent for *kare* to be anaphoric to.⁴

- (20) ??Daremo_i-ga kare_i-no ryoosin-ni kansya si-te i-ru.
 everyone-NOM he-GEN parents-DAT gratitude do-NF be-NPST
 'Everyone is grateful to his parents.'

In cases like (7), repeated here as (21), we saw that a bound variable reading of a third person pronoun was possible.

- (21) [Sono ondai-ni hait-ta] zyosi gakusei-no daremo_i-ga
 that music.college-to enter-PAST female student-GEN everyone-NOM
 [kanozyo_i-no sainoo-o mottomo yoku hikidasi-te kure-ru]
 she-GEN talent-ACC most fully bring.out-NF
 do.the.favour-NPST
 sensei-ni dea-e-ta.
 teacher-DAT meet-can-PAST
 'Every female student who entered that music college was able to meet a teacher who could bring out her talent to the full extent.'

With respect to (21) one may consider that if distance plays a role in the relative availability of a bound variable reading for a lower accessibility marker, (21) should not allow a bound reading of *kanozyo*, as it appears right next to the antecedent QP. I wish to claim, however, that it is the structural distance between a dependent term and its antecedent QP at LF which is crucial for the availability of a bound variable reading. As is clear from the English translation, *kanozyo* in (21) is embedded within a relative clause,

⁴ There is another factor which makes a bound variable reading of *kare/kanozyo* less easily available. We will come back to this point shortly.

hence there are a number of maximal projections intervening between the pronoun and its antecedent QP. Therefore, despite the PF proximity, *kanozoyo* can be anaphoric to its antecedent QP, which is now regarded as less accessible than cases like (20).⁵ Additional support for the LF distance can be seen in the following pair of examples.

- (22) a. *Daremo_i-ga kare_i-no hanasi-o sita.
 everyone-NOM he-GEN talk-ACC do-PAST
 ‘Everyone told his story.’
- b. ?Daremo_i-ga [kare_i-no itiban sonkei si-te i-ru] hito-no
 everyone-NOM he-GEN most respect do-NF be-NPST person-GEN
 hanasi-o si-ta.
 talk-ACC do-PAST
 ‘Everyone talked about the person he respected most.’

Note that the PF strings of (22a) and (22b) are exactly the same up to the point where the dependent term shows up (including the case particle), and yet (22b) is easier to have a bound variable reading than (22a), as the pronoun is more deeply embedded in the former than in the latter. If, however, (22b) is put into a larger context where *daremo* ‘everyone’ quantifies over the set of individuals who are the topic of discourse, then the QP is regarded as highly accessible and a bound variable reading of *kare* should become harder to obtain. This is exactly what happens in the following example.

- (23) John-to Bill-to Mike-ga atumat-te hanasi-o si-ta. Ironna
 John-and Bill-and Mike-NOM gather-NF talk-ACC do-PAST various
 koto-o hanasi-ta ga, Tom-no koto-mo wadai-ni nat-ta.
 thing-ACC talk-PAST but Tom-GEN thing-too topic-DAT become-PAST
 Sorekara, daremo-ga kare-no itiban sonkei si-te i-ru
 then everyone-NOM he-GEN most respect do-NF be-NPST
 hito-no hanasi-o si-ta.
 person-GEN talk-ACC do-PAST
 ‘John, Bill, and Mike got together and had a chat. They talked about various things and they also talked about Tom. Then everyone talked about the person he respected most.’

In (23) *John*, *Bill*, and *Mike* are the topic of discourse and the QP *daremo* quantifies over the set consisting of these three individuals. In such a case, there is a very strong preference to construe *kare* as being anaphoric to *Tom*

⁵ Although in English the PF distance mirrors the LF structural distance and it is not easy to observe the relevance of the LF distance for a bound variable interpretation, the contrast in (i) can support our claim if we assume that there is an additional VP projection for a double object construction (as has been assumed in the traditional GB-type clause structure) and hence there is more structural distance in (ib) than in (ia).

(i) a. *Every boy_i hugged that boy_i's girlfriend.
 b. Every boy_i sent that boy_i's best friend a Christmas card.

rather than as a variable bound by the QP; this is because a lower accessibility marker like *kare* signals to the addressee to search for a less accessible antecedent, in this case *Tom*, for its antecedent.

When we investigate examples of Japanese where a bound variable reading of a third person pronoun is possible, we find that they basically fall into two groups. One group consists of cases where a third person pronoun is deeply embedded within the sentence, hence the structural distance at LF is considered to be large, and the other group comprises cases where there is some modification to an antecedent QP so that the QP denotes a restricted set. The relevant examples are listed in (24) to (28).

- (24) ?Dono gakusei_i-mo[sensyuu kare_i-o suisen si-ta]
 every student-too last.week he-ACC recommendation do-PAST
 sensei-ni orei-o okut-ta.
 teacher-DAT gift-ACC send-PAST
 ‘Every student sent a gift to the teacher who recommended him last week.’ (Hoji et al. 1999: 2)
- (25) Nihonzoyosidai-no dareka_i-ga kondo-no gakusei
 Japan.Women’s.Univ.-GEN someone-NOM next.time-GEN student
 kaigi-ge kanozyo_i-no ronbun-o happyoo su-ru.
 conference-at she-GEN paper-ACC presentation do-NPST
 ‘Someone at Japan Women’s University is going to present her paper at the next student conference.’ (Aikawa 1991b: 202)
- (26) a. ??Dono hito_i-ga kare_i-no kuruma-de ki-ta-no?
 which person-NOM he-GEN car-in come-PAST-Q
 ‘Which person came in his car?’
 b. ?Dono sakka_i-ga kare_i-no kuruma-de ki-ta-no?
 which writer-NOM he-GEN car-in come-PAST-Q
 ‘Which writer came in his car?’
 c. Dono nooberusyoo zyusyoo sakka_i-ga kare_i-no kuruma-de
 which Nobel.Prize winning writer-NOM he-GEN car-in
 ki-ta-no?
 come-PAST-Q
 ‘Which Nobel Prize winning writer came in his car?’
 (Hoji 1991: 297-98)
- (27) John, Bill, Mike-no daremo_i-ga kare_i-no sensei-o
 sonkei si-te
 John Bill Mike-GEN everyone-NOM his-GEN teacher-ACC respect do-NF
 i-ru.
 be-NPST
 ‘Everyone, i.e. John, Bill, Mike, respects his teacher.’

- (28) ?Sono dansikoo-de-wa [Matsumoto sensei-ni eigo-o
 that boys'.school-at-TOP Matsumoto teacher-from English-ACC
 narat-ta] seito-no daremo-ga kare-no eigo-no
 learn-PAST student-GEN everyone-NOM he-GEN English-GEN
 zituryoku-o age-ta.
 proficiency-ACC improve-PAST
 'At that boys' school every student who learned English from Mr
 Matsumoto improved his English proficiency.'

Sentence (24) is a further example which confirms our hypothesis regarding the relevance of LF distance between a dependent term and its antecedent QP, while examples from (25) to (28) illustrate the fact that modification to the antecedent QP somehow 'improves' a bound variable reading of a third person pronoun. Particularly interesting in this regard is Hoji's observation with respect to the examples in (26): the more restricted an antecedent QP is, the easier it becomes to have a bound variable reading of *kare*.

How can we explain the phenomenon we observe in (25) to (28)? Does accessibility theory provide an answer to it? I wish to claim that the answer is yes, but before I present the analysis for it, let us first consider the nature of third person pronouns in Japanese. The point that I wish to draw attention to is the fact that Japanese *kare* and *kanozōyo* are specified for [+male] and [-male], respectively. Generally speaking, when we establish an anaphoric relation between two DPs, an anaphoric expression must be informationally poorer than its antecedent, or to put it differently, an anaphoric expression must not convey any new information that its antecedent does not have (see Ariel 1990: 201 and the references cited therein). Thus, the reason why the anaphoric relation in (29b) is worse than that of (29a) is because the anaphoric expression *the bus* encodes more information than its antecedent *the vehicle*.

- (29) a. The bus_i came trundling round the bend. The vehicle_i almost flattened a pedestrian.
 b. ??The vehicle_i came trundling round the bend. The bus_i almost flattened a pedestrian.
 (Ariel 1990: 201; originally from Sanford and Garrod 1981)

Now let us consider what would happen when we try to process a sentence like (20), repeated here as (30), *out of context*. Since *kare* inherently encodes the gender information [+male], which is not included in the antecedent QP *daremo*, the addressee will be inclined to search for an antecedent for *kare* which encompasses all of its information.^{6,7}

⁶ This includes not only the so-called ϕ -feature specification of *kare* [+3rd person, +singular, +male] but also the language-specific constraints like the impossibility for *kare* to be used to refer to someone with a socially higher status or a very young child (cf. Noguchi 1997: 778).

⁷ Aikawa (1991b) also observes that the gender specification for the antecedent QP is crucial for a felicitous bound variable reading.

- (30) ??Daremo_i-ga kare_i-no ryoosin-ni kansya si-te i-ru.
 everyone-NOM he-GEN parents-DAT gratitude do-NF be-NPST
 ‘Everyone is grateful to his parents.’

However, if (30) is uttered in a situation where we know from the context that *daremo* is intended to quantify over the set of men, a bound variable reading becomes easier to obtain. Thus, I wish to argue that the reason why it is possible to have a bound variable reading in cases like (25) to (28) is because it is easier to envisage what the antecedent QP quantifies over. This is clearly the case for (25), (27), and (28) where the gender specification for the antecedent QP is linguistically expressed, while in the case of (26) this is probably due to our (sexist) perception of the world that writers in general, or Nobel Prize winning writers especially, are more likely to be males.

Thus, in Japanese two factors conspire to make a bound variable reading of third person pronouns less easily available: one is that they are a lower accessibility marker, and the other is that they are specified for gender. When both of these factors are satisfied in that the antecedent QP is regarded as less accessible and the gender specification as to what the antecedent QP quantifies over is clear, a bound variable reading of *kare/kanozyo* becomes easy to obtain. Example (21) is such a case. On the other hand, when only one of the two factors is satisfied, it does become easier to have a bound variable reading compared to cases like (30) uttered out of context, and yet the reading may not be as felicitous as cases like (21).

Finally, let us consider a bound variable reading of *sono NPs* in Japanese. I have proposed at the end of the previous section that the partial accessibility marking scale in Japanese is the following:

- (31) Accessibility marking scale in Japanese
zibun < zero pronouns < third person pronouns < *sono NPs*

However, one may have some doubts about the relative ordering between third person pronouns and *sono NPs*, as *prima facie* it seems easier to have a bound variable reading with *sono NPs* than with third person pronouns. Thus, Hoji (1991) gives the following judgement.

- (32) a??Dono hito_i-ga [Mary-ga kare_i-o but-ta]-to it-ta-no?
 which person-NOM Mary-NOM he-ACC hit-PAST-COMP say-PAST-Q
 ‘Which person said that Mary hit him?’
 b. Dono hito_i-ga [Mary-ga sono hito_i-o but-ta]-to
 which person-NOM Mary-NOM that person-ACC hit-PAST-COMP
 it-ta-no?
 say-PAST-Q
 ‘Which person said that Mary hit that person?’
 (Hoji 1991: 299)

However, I would like to suggest that the reason why *sono hito* ‘that person’ seems easier to be bound than *kare* is because *sono hito* is gender-neutral and hence it does not contain any additional information that the antecedent QP does not have. Thus, the degree of acceptability of (32b) is comparable to the one in (33).

- (33) *Dono dansei-ga [Mary-ga kare-o but-ta]-to it-ta-no?*
 which man-NOM Mary-NOM he-ACC hit-PAST-COMP say-PAST-Q
 ‘Which man said that Mary hit him?’

Similarly, if we replace *sono hito* in (32b) with *sono zyosei* ‘that lady’, then a bound variable reading becomes very hard or impossible to obtain.

- (34) **Donohito-ga [Mary-ga sono zyosei-o but-ta]-to it-ta-no?*
 which person-NOM Mary-NOM that lady-ACC hit-PAST-COMP say-PAST-Q
 ‘Which person said that Mary hit that lady?’

Hence, we conclude that contrary to the observation made in the previous literature, it is not the case that *sono NPs* can yield a bound variable reading more easily than third person pronouns.

4. Conclusion

In this paper I have argued that the availability of a bound variable interpretation for different dependent terms follows from accessibility theory. In a default case the speaker chooses a high accessibility marker to encode a bound variable interpretation. This is because the antecedent QP typically occupies the subject position and hence it is regarded as highly accessible. However, if the structural distance at LF between a dependent term and its antecedent QP becomes larger, a lower accessibility marker can in principle be used to yield a bound variable reading as well. We have also seen that in Japanese third person pronouns are not easily construed as bound variables due to the conspiracy of two factors: (i) they are a lower accessibility marker, and (ii) they are specified for gender. However, when both of these factors are satisfied in that the antecedent QP is regarded as less accessible and the gender specification as to what the antecedent QP quantifies over is clear, a bound variable reading of a third person pronoun becomes easy to obtain.

Acknowledgements

I wish to thank Tanya Reinhart for suggesting me to work on accessibility theory and for her very helpful comments and discussions. I also wish to thank Mira Ariel and Eric Reuland for many insightful comments and Bill Philip for judgements on English.

References

- Aikawa, T. (1991a). Behaviour of Japanese anaphoric expressions in sloppy identity: *Karera* 'they' and *zibun* 'self'. Bobaljik, J.D. & T. Bures (eds.), *MIT Working Papers in Linguistics 14: Papers from the Third Student Conference in Linguistics*. MIT Press, Cambridge, MA, pp. 1-16.
- Aikawa, T. (1991b). Bound variable interpretation and overt pronouns in Japanese. Alexander, M. & M. Dressler (eds.), *Papers from the Second Annual Meeting of the Formal Linguistics Society of MidAmerica*. University of Michigan, Ann Arbor, pp. 196-216.
- Aldridge, E. (1997). Discourse level binding of Japanese third-person pronouns. *Sophia Linguistica* 41, pp. 1-20.
- Ariel, M. (1990). *Accessing noun-phrase antecedents*. Routledge, London.
- Ariel, M. (1991). The function of accessibility in a theory of grammar. *Journal of Pragmatics* 16, pp. 443-463.
- Ariel, M. (1994). Interpreting anaphoric expressions: A cognitive versus a pragmatic approach. *Journal of Linguistics* 30, pp. 3-42.
- Broadbent, D.E. (1973). *In defence of empirical psychology*. Methuen, London.
- Burzio, L. (1996). The role of the antecedent in anaphoric relations. Freidin, R. (ed.), *Current issues in comparative grammar*. Kluwer, Dordrecht, pp. 1-45.
- Evans, G. (1977). Pronouns, quantifiers, and relative clauses. *Canadian Journal of Philosophy* 7, pp. 467-536.
- Evans, G. (1980). Pronouns. *Linguistic Inquiry* 11, pp. 337-362.
- Fiengo, R. & M. Haruna (1987). Parameters in binding theory: Some suggestions based on an analysis of Japanese. Imai, T. & M. Saito (eds.), *Issues in Japanese linguistics*. Foris, Dordrecht, pp. 107-128.
- Fiengo, R. & R. May (1994). *Indices and identity*. MIT Press, Cambridge, MA.
- Hara, T. (2000). Bound variables in Japanese. Hoop, H. de & T. van der Wouden (eds.), *Linguistics in the Netherlands 2000*. John Benjamins, Amsterdam, pp. 69-80.
- Heim, I. (1992). Anaphora and semantic interpretation: A reinterpretation of Reinhart's approach. Ms., MIT, Cambridge, MA.
- Higginbotham, J. (1992). Anaphoric reference and common reference. Ms, MIT, Cambridge, MA.
- Hoji, H. (1991). *KARE*. Georgopoulos, C. & R. Ishihara (eds.), *Interdisciplinary approaches to language: Essays in Honour of S.-Y. Kuroda*. Kluwer, Dordrecht, pp. 287-304.
- Hoji, H. (1995). Demonstrative binding and principle B. Beckman, J.N. (ed.), *Proceedings of the North East Linguistic Society 25: Volume One, Papers from the Main Sessions*. GLSA, Amherst, pp. 255-271.
- Hoji, H. (1997). Sloppy identity and principle B. Bennis, H., P. Pica & J. Rooryck (eds.), *Atomism and binding*. Foris, Dordrecht, pp. 205-234.
- Hoji, H., S. Kinsui, Y. Takubo & A. Ueyama (1999). Demonstratives, bound variables, and reconstruction effects. Ms, University of Southern California, Los Angeles.
- Kitagawa, C. (1981). Anaphora in Japanese: *Kare* and *zibun*. Farmer, A.K. & C. Kitagawa (eds.), *Coyote Papers, Working Papers in Linguistics from A → Z 2: Proceedings of the Arizona Conference on Japanese Linguistics, the Formal Grammar Sessions*. University of Arizona, Tucson, pp. 61-75.
- Nishigauchi, T. (1986). *Quantification in syntax*. Diss, University of Massachusetts, Amherst.
- Noguchi, T. (1997). Two types of pronouns and variable binding. *Language* 73, pp. 770-797.
- Partee, B.H. (1989). Binding implicit variables in quantified contexts. Wiltshire, C., R. Graczyk & B. Music (eds.), *CLS 25: Papers from the 25th Annual Regional Meeting of the Chicago Linguistic Society, Part One, the General Session*. Chicago Linguistic Society, Chicago, pp. 342-365.
- Richards, N. (1997). Competition and disjoint reference. *Linguistic Inquiry* 28, pp. 178-187.
- Reuland, E. (1998). Structural conditions on chains and binding. Tamanji, P.N. & K. Kusumoto (eds.), *Proceedings of the North East Linguistic Society 28: Volume One, Papers from the Main Sessions*. GLSA, Amherst, pp. 341-356.
- Saito, M. & H. Hoji (1983). Weak crossover and move α in Japanese. *Natural Language and Linguistic Theory* 1, pp. 245-259.
- Sanford, A.J. & S.C. Garrod (1981). *Understanding written language*. John Wiley & Sons, Chichester.
- Sells, P. (1985). Coreference and bound anaphora: A restatement of the facts. Berman, S., J.-W. Choe & J. McDonough (eds.), *Proceedings of NELS 16*. GLSA, Amherst, pp. 434-446.

Tomioka, S. (1996). On the mismatch between variable binding and sloppy identity. Camacho, J., L. Choueiri & M. Watanabe (eds.), *The Proceedings of the Fourteenth West Coast Conference on Formal Linguistics*. CSLI, Stanford, pp. 541-556.

Genitive of negation and the syntax of scope

Stephanie Harves

This paper presents a new approach to the Scope-licensing and Case-marking of direct objects under sentential negation in Russian. Adopting a modified version of Beghelli & Stowell (1997), I argue that scope is licensed in the syntax via a feature-matching mechanism. Accusative direct objects will be argued to have their Case valued *in situ*, i.e., *vP*-internally, via the operation *Agree* (as in Chomsky 1998, 1999), while ‘checking’ scope in a position external to *vP*, i.e., Spec RefP. I argue that genitive direct objects, on the other hand, have their Case valued *in situ* through NEG feature-matching with Neg⁰, while checking their scope feature in Spec NegP.

1. The data

This paper presents a new approach to an old problem in Russian syntax, namely, the problem of genitive Case-assignment to direct objects under sentential negation. In Russian, non-oblique VP-internal arguments can receive either genitive or accusative Case within the scope of negation, as shown in (1)-(3) below.^{1, 2, 3}

¹ For the sake of completeness, I have included the data in (2)-(3); however, I will not be discussing Genitive of negation (GN) on subjects of unaccusative or passive predicates. Presumably, whatever mechanism is responsible for GN case-licensing on direct objects is also responsible for GN on VP-internal subjects.

² Subjects of the existential verb *byt’* ‘to be’ in Russian also undergo GN. However, unlike the examples in (1-3), these NPs *obligatorily* undergo GN. A thorough discussion of these examples is beyond the scope of this paper, although I will return to them briefly in Section 2.1. I refer the reader to Babyonyshev (1996) and Brown (1999) for recent discussion of these examples.

(i) a. *Nikto ne byl doma. b. Nikogo ne bylo doma.
nobody-NOM NEG was at-home nobody-GEN NEG was at-home
‘Nobody was home.’ ‘Nobody was home.’

³ I will be using the following notation in glossing examples throughout this paper:
NOM = nominative, ACC=accusative, GEN=genitive, DAT=dative, INST=instrumental

(1) Direct Objects of Transitives

- a. Anna ne kupil knigi.
Anna-NOM NEG bought books-ACC
'Anna did not buy the books.'
- b. Anna ne kupila knig.
Anna-NOM NEG bought books-GEN
'Anna didn't buy any books.'

(2) Subjects of Unaccusatives

- a. Otveta ne prišlo.
answer-GEN NEG came
'No answer came.'
- b. Otvet ne prišel.
answer-NOM NEG came.
'The answer did not come.'

(3) Subjects of Passives (from Brown 1999)

- a. Ne bylo počteno gazet.
NEG was received newspapers-GEN
'No newspapers were received.'
- b. Gazeta ne byla počtena.
newspaper-NOM NEG was received.
'The newspaper was not received.'

For many years, the licensing of the Genitive of Negation (GN) on direct objects was viewed as an optional component of the grammar. However, with the development of Diesing's (1992) Mapping Hypothesis, it became possible to account for the apparent semantic differences exhibited by GEN and ACC direct objects in the syntax. Note that in (1a) the ACC object *knigi* 'books' receives a definite or referential interpretation, whereas the GEN object *knig* 'books' neutrally receives an indefinite or existential interpretation. This pattern seems to hold in the general case of GN in Russian, i.e., GEN internal arguments tend to receive an indefinite or existential interpretation while NOM and ACC internal arguments receive a definite or referential interpretation. With respect to interpretation, these data resemble oft-quoted examples of object shift in various Germanic languages, where scrambled direct objects receive a non-existential interpretation, while *in situ* direct objects are interpreted existentially, as shown in (4) below.

(4) Object Shift in German

(Diesing 1992:107-108)

- a. ... [CP daß [IP Otto immer [VP Bücher über Wombats liest]]]
that Otto always books about wombats reads
Always_t [*t* is a time] \exists_x *x* is a book \wedge Otto reads *x* at *t*
- b. ... [CP daß [IP Otto Bücher über Womats immer [VP liest]]]
that Otto books about wombats always reads
Always_x [*x* is a book] Otto reads *x*

In (4a), the direct object remains VP-internal at Spell-out, and the indefinite NP is interpreted as a variable, bound by Existential Closure. In (4b), however, the object has scrambled outside the VP and is bound by the adverb *immer* ‘always’.⁴ Thus, while the interpretation of direct objects in German is determined based on their hierarchical position within the clause, in Russian, the interpretation of direct objects under negation is determined, in large part, by Case-marking.

In this paper, I will point out various problems associated with previous analyses of the Genitive of Negation in Russian. I will suggest a new analysis to account for the interpretation of genitive and accusative direct objects, casting doubt on analyses which treat the genitive-accusative alternation in Russian as support for either Diesing’s Mapping Hypothesis or for approaches which treat GN as the result of case-licensing by a null quantifier that functions as a Negative Polarity Item. The remainder of this paper is structured as follows. In Section 2, I discuss two recent proposals concerning GN, pointing out where each analysis fails to account for certain key points of data. In Section 3, I present my proposal, relying on Beghelli & Stowell’s (1997) analysis of Scope-checking in the Syntax. Here, I argue that genitive direct objects in Russian have both their Case and Scope features valued through NEG feature agreement with Neg⁰. Accusative NPs, on the other hand, will be argued to have their Case valued *v*P-internally, i.e., *in situ*, via the operation Agree, in accordance with recent minimalist proposals in Chomsky (1998, 1999). However, I argue that when these accusative NPs are referential or presuppositional, getting their reference independently, they must raise to a scope position that c-commands the rest of the clause. The interpretations of accusative and genitive NPs will then fall out from positions within feature-matching chains, without recourse to Diesing’s Mapping Hypothesis. This analysis will also differ from Hornstein’s (1995) proposal, which states that scope is determined based on Case-checking chains alone. If my assumptions about the clause structure and Case-licensing properties of Russian turn out to be correct, then it will be clear that Hornstein’s approach to scope cannot be accurate. I now move to a discussion of two recent proposals concerning GN in Russian: Pereltsvaig (1999) and Brown (1999).

2. Previous analyses

2.1. Pereltsvaig (1999)

Pereltsvaig (1999) takes Pesetsky’s (1982) analysis of GN as her starting point, assuming that a null quantifier is responsible for assigning genitive to internal arguments under sentential negation. She argues that this null quantifier is a strict Negative Polarity Item (NPI), both syntactically and semantically,

⁴ Note that the German sentences are not examples of scrambling under negation. The parallel being drawn here is between the interpretations of the direct objects alone, setting aside the larger issue of negation.

licensed solely by sentential negation. She proposes a constraint on GN that she refers to as the Referentiality Constraint.

(5) *The Referentiality Constraint* (Pereltsvaig 1999:18)

If the object participant is referential, it cannot be quantified over by **q**.
Thus, it cannot be assigned Genitive and is instead assigned Accusative.

It is true, in general, that referential NPs cannot receive genitive case under negation. Babyonyshev (1996:145) discusses this constraint as well, giving the examples in (6) below.⁵

- (6) a. Vanja ne pročitál *Vojnu i Mir*.
Vanya NEG read War and Peace-ACC
'Vanya didn't read *War and Peace*.'
b. *Vanja ne pročitál *Vojny i Mira*.
Vanya NEG read War and Peace-GEN

However, if Pereltsvaig's (1999) analysis of GN is correct, and a null quantifier **q** is responsible for assigning Genitive case under negation, then it is unclear why examples such as (7a) should be allowed at all.

- (7) a. Maši ne bylo doma.
Maša-GEN NEG was home
'Maša wasn't home.'
b. *Maša ne byla doma.⁶
Maša-NOM NEG was home

⁵ Pereltsvaig (1999:25) notes that there **are** counterexamples to her referentiality constraint, citing the examples in (i) below.

- (i) a. Ja ne vižu mamu. b. Ja ne vižu mamy.
I NEG see mama-ACC I NEG see mama-GEN
'I **don't** see mother.' 'I **can't** see mother.'

She claims that in (ib), GN gives rise to a modal (possibility) reading. Thus, she argues that the null quantifier **q** quantifies over the instantiations of 'mother' in all possible worlds, as opposed to quantifying over 'mother'. Pereltsvaig argues that all of these apparent counterexamples to her Referentiality Constraint contain perception verbs, which have been argued to be inherently ambiguous between an actual-perception reading and a possibility-reading. Therefore, these examples may not be true counterexamples, given the semantics of the verbs themselves. However, Yahor Tsedryk (p.c.) points out that examples such as (ii) are perfectly acceptable for him as well.

- (ii) Ja ne našel Maši / Mašu.
I NEG found Masha-GEN/ACC
'I didn't find Masha.'

It is unclear whether speakers who accept the GEN-ACC alternation in (ii) feel the same semantic distinction as in (i) above. I set these examples aside as a puzzle for the moment, leaving them for further investigation.

⁶ Note that (7b) is in fact **grammatical** under a contrastive-focus reading on *doma* 'at home.' All the native speakers I consulted on this example indicated that the sentence feels 'unfinished' to them, i.e., they expect the speaker to tell them where Maša actually was: *Maša ne byla doma a u menja* 'Maša-NOM wasn't at home but at my place.' This seems to indicate that constituent negation is involved here, rather than sentential negation. Thus, it is no surprise that GN is not licensed.

In Russian, GN is *obligatory* on subjects of the existential verb *byt'* 'to be', regardless of their in/definiteness, i.e., the Referentiality Constraint does not hold here. Presumably, whatever mechanism is responsible for licensing GN on direct objects should also be responsible for GN on subjects of BE in Russian. Thus, Pereltsvaig's proposal for GN Case-licensing must be restricted to cases of direct objects alone, when, ideally, we would like to propose a single mechanism to account for all cases of GN.⁷

Furthermore, it is not clear that Pereltsvaig's null quantifier **q** should be treated as an NPI in Russian, although, at first blush, this appears to be the case. It is true that GN is licensed solely in contexts of clausemate sentential negation, as are strict NPIs in Russian. For example, negative polarity items such as *nikto* 'nobody' and *nikogda* 'never', i.e., *niPs*, in Russian are licensed solely by clausemate negation, patterning with GN. This is shown in (8).

- (8) a. **Nikto nikogda ne** čitaet gazet-y/-Ø.
no-who no-when NEG reads newspapers-ACC/GEN
'No one ever reads newspapers.'
- b. ***Ja ne** skazala, čto **nikto nikogda** čitaet gazet-y/*-Ø.
I NEG said that no-who no-when reads newspapers-ACC/*GEN
'I didn't say that no one ever reads newspapers.'

However, there is, in fact, one syntactic environment where GN is licensed and strict NPIs in Russian are not.⁸ These are cases of so-called 'pleonastic' or 'expletive' negation. Roughly stated, pleonastic negation is a context where negation is licensed in the syntax without yielding a negative interpretation in the semantics. Thus, sentences with pleonastic negation do not carry any negative meaning themselves. Cross-linguistically, pleonastic negation is quite common, with various syntactic or lexical factors contributing to the licensing of this construction. In English, for example, expletive negation is frequently found in exclamatives, as in (9), while in Polish, pleonastic negation is licensed in concessive conditionals, shown in (10). Russian examples are given in (11).

- (9) Who doesn't like chocolate?! (=Everyone likes chocolate)
- (10) Polish concessive conditional (from Citko 2000:156)
Co by się **nie** stalo, pojedziemy jutro na plażę
what COND REFL NEG happened we-will-go tomorrow on beach
'Whatever happens, we will go to the beach tomorrow.'
- (11) Pleonastic/Expletive Negation in Russian (from Brown 1999:96-97)
a. **Ne** dopustil **li** kto-nibud' / ***nikto** ošibki?
NEG allow Q who-any / no-who mistake-GEN
'Could someone have made a mistake?'

⁷ Unfortunately, due to space limitations, I am unable to discuss these examples further. While I am convinced that a single Case-licensing mechanism is responsible for GN on both copular subjects and direct objects, something additional clearly needs to be said about the distribution of GN here.

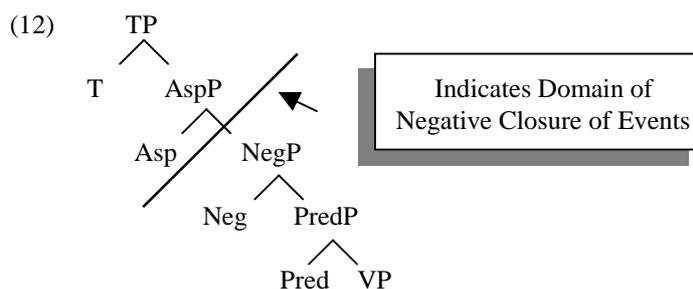
⁸ To my knowledge, Brown & Franks (1995) first pointed this out about Russian.

- b. ...**poka ne** poluču vašego kakogo-nibud'/***nikakogo** otveta.
 until NEG receive your /which-any/ no-which answer-GEN
 '...until I receive your/some/*no answer'

Note that in the Russian examples in (11), GN is licensed on the direct object in each example, despite the fact that *ni*Ps, i.e., strict NPIs in Russian, are not. These examples cast serious doubt on Pereltsvaig's (1999) analysis of GN as a strict NPI. Therefore, I will assume that this is not the correct analysis for GN in Russian. I now move on to Brown's (1999) analysis of GN, which differs greatly from Pereltsvaig's proposal.

2.2. Brown (1999)

Brown (1999) adopts a strictly minimalist feature-checking analysis to explain the distribution of GN in Russian. She argues that GN is a structural case in Russian, and that all genitive NPs raise to the Spec of NegP, either overtly or covertly, to check their case feature. In contrast, she argues that accusative direct objects will raise to the Spec of an Aspect Phrase (AspP) to check their case, again, either covertly or overtly. Similar to previous analyses of GN in Russian (such as Babyonyshev 1996 and Bailyn 1997), Brown adopts Diesing's (1992) Mapping Hypothesis to explain the interpretation of accusative and genitive direct objects in Russian. She argues that genitive direct objects will always have an existential interpretation because they do not escape the domain of existential closure. Under Diesing's original proposal, the domain of existential closure was defined as the VP. However, Brown (1999) argues that under negation, the domain of existential closure is extended to include NegP. She refers to this extended domain as the 'Domain of Negative Closure of Events'. The clause structure she proposes is shown in (12).



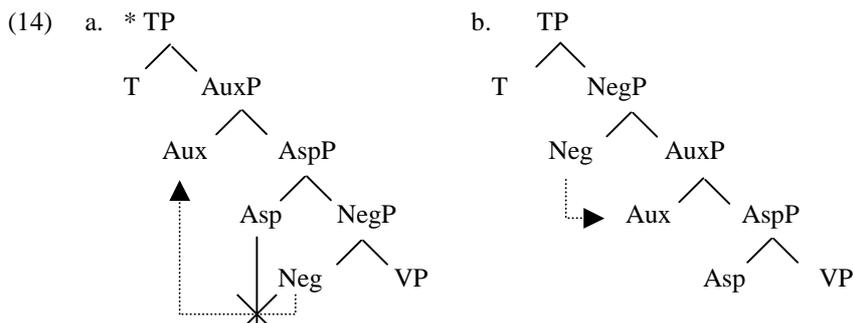
Given Brown's assumptions about the clause structure of Russian, the implementation of her proposal is clear. She argues that since accusative direct objects check their Case in a position external to the domain of negative closure of events, i.e., Spec AspP, they can receive a presuppositional or referential interpretation. However, since the tail of their chain lies within this domain, accusative NPs can also be interpreted existentially. In contrast, genitive NPs

will be obligatorily existential, given that their Case-checking chain falls entirely within the domain of negative closure of events.

There are several reasons to reject this analysis. First, the clause structure Brown proposes for Russian is unmotivated given what we know about verbs and aspect in Russian. While there have been a great deal of independently motivated reasons for positing an Aspect Phrase in the syntax (see, in particular, Schoorlemmer 1996), it is unclear that its position in Russian should c-command NegP. Note the examples in (13) below.

- (13) a. Ja ne začítaju níkakogo spiska imen.
 I NEG read-aloud-PERF 1SG no list-GEN names
 ‘I will not read any list of names aloud.’
 b. Ja ne začítývaju níkakogo spiska imen.
 I NEG read-aloud-IMP 1SG no list-GEN names
 ‘I am not reading any list of names aloud.’
 c. Ja ne budu začítývát’ níkakogo spiska imen.
 I NEG will-1SG read-aloud-IMP INF no list-GEN names
 ‘I will not be reading any list of names aloud.’
 d. *Ja budu ne začítývát’ níkakogo spiska imen
 I will-1SG NEG read-aloud-IMP INF no list-GEN names

In (13a) we have the perfective verb *začítat’* ‘to read aloud’. In (13b) we see its derived imperfective counterpart, formed with the imperfectivizing infix *-yvaj-*, indicating that aspect is a verbal affix in Russian. Finally, in (13c), the periphrastic future tense is created with the auxiliary *byť* ‘to be’. Note here that aspect is still an infix on the main verb; it is not realized on the auxiliary. The reason for including these examples in the current discussion is to try to pinpoint the syntactic location of AspP, with respect to NegP. Consider the structures in (14) below.



If the head of AspP were to c-command negation, as in (14a), we might expect the word order in (13d), as opposed to the order in (13c). If Aspect were to come between the auxiliary verb *буду* ‘I-will’ and the negation marker *не*, we might not expect negation to procliticize to the auxiliary, but rather, to the main verb itself (under the assumption that proclitics ‘look right’ in the linear string for something to attach themselves to). Alternatively, we might expect Neg⁰ to

prevent the verb from raising to Asp⁰, in order to combine with its imperfectivizing suffix *-yvaj-* (or features thereof) due to a Relativized Minimality effect. Therefore, contrary to the claim made by Brown, I argue that NegP dominates both the Aspect Phrase and the Auxiliary Phrase in the syntax.⁹

Further evidence for abandoning an account that relies on the domain of existential closure comes from (15) below (formerly (2a) above).

- (15) *Otveta* *ne* *prišlo*.
 answer-GEN NEG came
 ‘No answer came.’

Any analysis of GN which relies solely on Diesing’s Mapping Hypothesis for an explanation of the interpretation of genitive NPs will have to account for the fact that in (15) the genitive NP *Otveta* ‘answer’ has raised from its VP-internal position under neutral discourse, presumably to satisfy the EPP in Spec TP.¹⁰ Yet, note that this NP still receives an existential interpretation. Under Brown’s proposal, this NP would obligatorily receive a presuppositional interpretation, yet we see from the gloss that this is clearly not the case. Therefore, based on the evidence in (15), we have further motivation for abandoning Brown’s analysis as a complete explanation for the facts.

3. The Proposal

3.1. *Beghelli & Stowell (1997)*

I will now argue for an analysis of GN in Russian that makes use of the independently motivated Scope-checking mechanism argued for in *Beghelli & Stowell (1997)*. *Beghelli & Stowell (B&S)* make two central assumptions in their theory of scope. First, they assume that quantifier scope is determined by c-command relations holding at LF. Second, they assume that Quantifier

⁹ It is, of course, possible that there is no AuxP in the syntactic structure. In this case, I assume that the auxiliary is instead located in the head of TP. Regardless of the location of the auxiliary in the functional clause structure, the issue remains as to why negation would cliticize to the auxiliary as opposed to the main verb itself, if the structure is as *Brown (1999)* proposes, i.e., (14a). Thus, my argument against her analysis still holds.

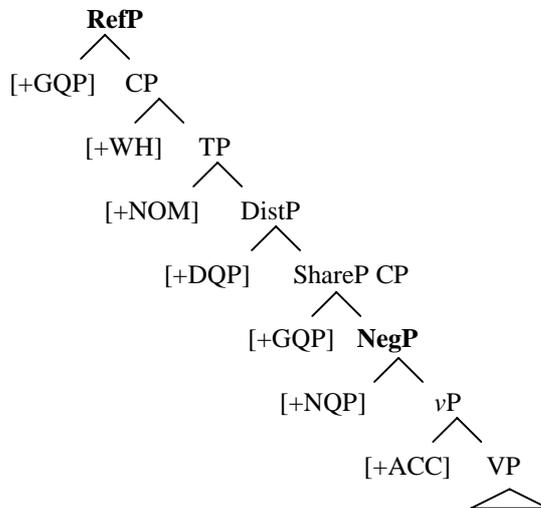
¹⁰ Here I follow *Lavine (2000)* who convincingly argues that the EPP is best viewed as an independent, uninterpretable feature of the clause, capable of motivating syntactic movement in the absence of either nominative Case or agreement. Evidence from Russian is found in numerous examples of so-called ‘Adversity Impersonals’, as in (i) below (see *Babby 1994* for further discussion of this construction).

(i) Russian Adversity Impersonal (from *Lavine 2000:24*)
Ženščinu_i zadavilo t_i ‘kovrom-samoletom’ v parke Gor’kogo.
 woman-ACC crushed [-AGR] carpet-airplane-INST in park of-Gorky
 ‘A woman was crushed by the flying carpet [attraction] in Gorky Park.’

Lavine points out that *Ženščinu* ‘woman’ is interpreted as an indefinite NP under neutral discourse, despite the fact that it has raised overtly from its VP-internal position. Note that neither its ACC Case feature nor its lack of agreement with the verb prevents it from raising to TP to satisfy the EPP. This same pattern is exhibited by (15) above.

Phrases (QPs) are assigned scope by undergoing movement to their scope positions in the derivation of LF representations. Where B&S depart from previous analyses of QR, such as May (1985) and Aoun & Li (1993), is in their rejection of the uniformity of quantifier scope assignment. That is, they deny that QR applies uniformly to all QP types. Rather, each type of QP is associated with its own unique scope position in the functional clause structure. Based on data primarily from English, they argue for the functional clause structure in (16) below.

(16) Functional Clause Structure (Beghelli & Stowell 1997:76)¹¹



For the purposes of this paper, I will focus primarily on the projections RefP and NegP, where RefP stand for “Referential” Phrase. B&S argue that movement of various quantified expressions to their scope positions is driven by the need to check features that are associated with their QP types. So, for example, QPs that are referentially independent will normally occupy Spec RefP at LF, where they might fulfill the function of logical subject of predication or topic, and are interpreted with widest scope relative to other scope-bearing elements in their clause. I argue that they raise to check a [+REF] Scope-feature against an existential operator head, Ref⁰, at LF. Negative Quantifier Phrase (NQPs), on the other hand, will check their [+NEG] feature against the head of NegP. These two functional categories, i.e., RefP and NegP, will play a crucial role in my analysis.

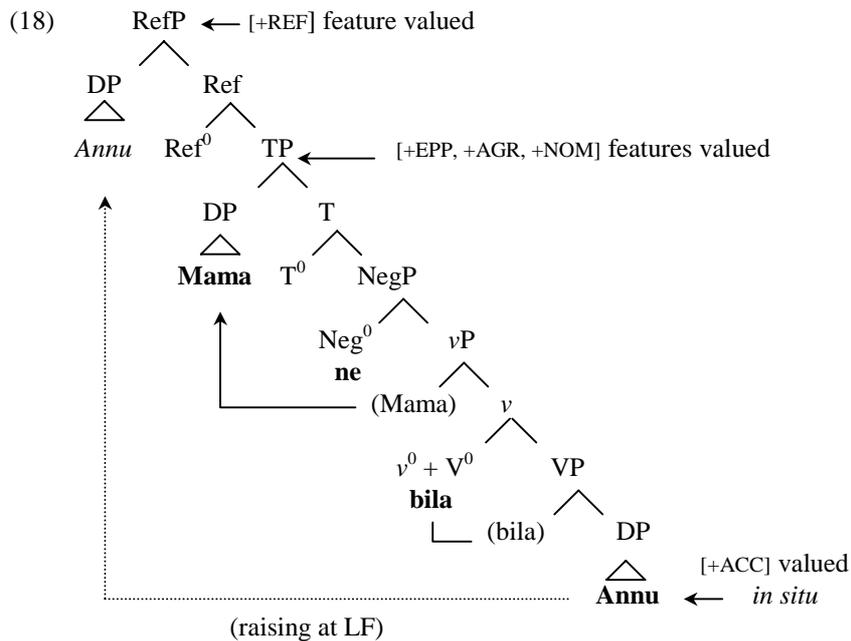
¹¹ I have adapted their structure slightly, substituting TP for AgrSP and vP for AgrOP.

3.2. Accounting for the Referentiality Constraint

Adopting Beghelli & Stowell’s (1997) proposal allows us to explain several mysterious facts about the distribution of GN in Russian. Recall Pereltsvaig’s (1999) Referentiality Constraint from Section 2.1, which states that only accusative Case is licensed on referential direct objects under sentential negation (see 17 below).

- (17) a. Mama ne bila Annu.
 Mama NEG beat Anna-ACC
 ‘Mama didn’t beat Anna.’
- b. *Mama ne bila Anny.
 Mama NEG beat Anna-GEN

I argue here that Beghelli & Stowell’s proposal allows us to account for the Referentiality Constraint without recourse to either the null quantifier analysis of Pereltsvaig (1999) or to Brown’s (1999) analysis, which relies solely on the domain of existential closure for the interpretation of NPs. Let us first consider the grammatical sentence in (17a) above, represented by the structure in (18).¹²

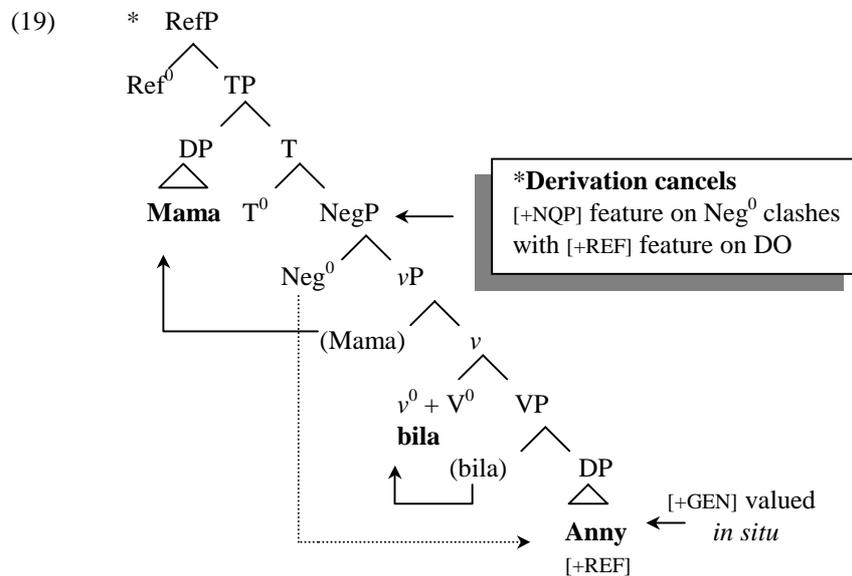


In (18) I assume that the ACC direct object *Annu* has its case valued *in situ* via the feature-matching mechanism proposed in Chomsky (1998, 1999), i.e.,

¹² For all syntactic structures henceforth, lexical items in **bold** are Spell-Out positions; items in *italics* are scope positions; and items in (parentheses) are copies of movement.

Agree.¹³ Here, Agree holds between the probe V_{COMP} *bila* ‘beat’ and the goal *Annu*, deleting the ϕ -set of V and the ACC Case feature on *Annu*.¹⁴ I will further assume that structural ACC case in Russian carries inherent existential presupposition, in contrast to GEN, which does not.¹⁵ Leaving aside questions about intermediate stages of successive cyclic movement, I argue that *Annu* raises further, i.e., covertly, to have its [+REF] feature valued by the head of RefP, presumably via the same feature-matching mechanism discussed earlier for Case, i.e., Agree.¹⁶ However, unlike the uninterpretable features involved with Case-matching, we may assume that Scope features are interpretable, and, therefore, will not delete through matching.

Having accounted for the felicitous sentence in (17a), we are now left with (17b). What rules out GN on the direct object here? (See 19 below.)



In (19), I argue that the genitive direct object *Anny* has its case valued *in situ* via NEG feature-matching with the probe Neg⁰.¹⁷ I argue that GN is licensed on the direct object, in part, as a result of a ϕ -incomplete V, i.e., a **defective V** that has no object agreement feature. In the lack of this agreement feature, ACC cannot be valued. Therefore, the goal, i.e., the direct object, must locate another

¹³ I adopt Chomsky's (1998) feature-matching mechanism here precisely because it allows for deletion of case features *in situ*. I would argue that there is no evidence for case-driven NP-raising in Russian. See Harves & Lavine (1998) for further argumentation.

¹⁴ Where V_{COMP} stands for a ϕ -complete V. Note here that I depart slightly from Chomsky (1999) in assuming that it is V_{COMP} which is necessary for valuing ACC case, rather than v_{COMP} .

¹⁵ This claim will become important to my analysis in Section 3.4.

¹⁶ The status of A'-movement within Chomsky (1999) remains unclear. However, it does not seem unreasonable to extend all instances of feature-valuing to the Agree(ment) mechanism proposed in Chomsky (1999). This is a larger issue that is clearly beyond the scope of this paper.

¹⁷ I follow Brown (1999) in assuming that GN is licensed by Neg⁰.

probe in order to have its Case valued. The closest probe is then Neg^0 . However, I argue that once *Anny* enters into an agreement relation with Neg^0 , any other remaining features that *can* potentially match those of the probe, *must* do so. In this example, the direct object *Anny* not only carries a GEN Case-feature but also a [+REF] scope feature, given that *Anna* is a referentially independent NP. The derivation will cancel, as a result of the fact that the [+REF] feature on the direct object will clash with the [-NQP] feature on the head of Neg^0 . Therefore, a referential direct object in Russian cannot receive genitive Case under sentential negation due to a mismatch in scope features. In essence, we have just derived Pereltsvaig's (1999) Referentiality Constraint from the syntax, without recourse to a null quantifier.

3.3. The scope of genitive NPs

Having examined two scenarios involving referential NPs in 3.2. above, we now turn to a discussion of non-referential direct objects under negation in Russian. As asserted throughout this paper, genitive direct objects tend to receive an existential or indefinite interpretation, while accusative direct objects receive either a referential or definite interpretation. I would like to suggest that there are at least two ways for a genitive direct object in Russian to have its scope licensed: (1) via feature-matching with an [+NQP] feature in Neg^0 or (2) *in situ*, where it enters into no Scope-matching relations at all but, rather, is simply interpreted as a variable, bound by an existential operator à la Heim (1982). Hence, it is important to understand that **not all NPs raise for Scope-checking**. Therefore, not all NPs will enter into Scope-matching relations. We will first consider option (1), where Scope-licensing occurs in Spec NegP. Consider example (20).

- (20) Anna ne kupila nikakix knig.
 Anna NEG bought any books-GEN
 'Anna didn't buy any books.'

In (20), the direct object *nikakix knig* receives genitive Case under negation. At least two questions must be addressed with respect to this example: (i) How is GN licensed? (ii) How does the direct object have its Scope licensed? Note that the direct object remains *in situ* at Spell-Out, indicating that no overt movement of the direct object has occurred, either for Case or Scope. Therefore, as stated earlier, I assume that genitive Case is valued and subsequently deleted *in situ*, via [+NEG] feature-matching. However, at LF, the NP must raise to value its Scope feature in Spec NegP. Therefore, the genitive NP will have both its GN Case-feature as well as its [+NQP] scope feature valued through features of Neg^0 . This is shown in (21).

3.4. Accounting for the lack of accusative *ni*Ps

Finally, I would like to offer an explanation for an additional set of data that has puzzled linguists for decades, namely, the lack of accusative *ni*Ps (strict NPIs) in Russian. One example is given in (23) below.

- (23) a. *Ja ne polučil **ni** odno pis'mo. (Pesetsky 1982:215)
 I NEG received not one letter-ACC
 b. Ja ne polučil **ni** odnogo pis'ma.
 I NEG received not one letter-GEN
 'I didn't receive a single letter.'

In Russian, *ni* 'not' is an emphatic particle which seems to indicate that the word or phrase to which it attaches lacks reference completely, thereby intensifying negation. It may prefix virtually any NP in the context of sentential negation, provided the NP is not accusative. For example, the sentences in (24) are all perfectly grammatical utterances in Russian.

- (24) a. **Ni odin student** ne spal. (*ni*+NOM)
 not one student-NOM NEG slept
 'Not a single student slept.'
 b. Ja **ni odnomu mal'čiku** ne dal jabloko. (*ni*+DAT)
 I not one boy-DAT NEG gave apple
 'I didn't give a single boy the apple.'
 c. On nikogda ne rukovodil **ni odnim proektom** (*ni* + INST)
 he never NEG led not one project-INST
 'He never led a single project.'

It has remained a mystery why accusative *ni*Ps are so strongly dispreferred in Russian, as in (23a). I would like to suggest that the analysis of Scope-matching presented here can account for this gap in the paradigm. Recall the claim from Section 3.2., which states that accusative Case in Russian carries inherent existential presupposition. Assuming this is correct, we have a ready explanation for the lack of accusative *ni*Ps in Russian. I have argued that *ni*Ps must raise to Spec NegP to have their [+NQP] feature valued. If an accusative *ni*P raises through NegP, either overtly or covertly, its existential presupposition will clash with the features of Neg⁰, causing the derivation to cancel.¹⁹ This is reminiscent of the feature-mismatch discussed earlier for referential genitive NPs, which are similarly disallowed in Russian. Thus, adopting a somewhat modified version of B&S's (1997) system of syntactic Scope-checking allows us not only to account for the interpretation and distribution of genitive direct objects in Russian, but also to rule out those cases which are categorically excluded from the grammar.

¹⁹ I thank David Adger for discussion of this point.

Acknowledgments

Many thanks to Klaus Abels, David Adger, Abby Konopasky, Jim Lavine, Ora Matushansky, and the ConSOLE 9 audience for valuable discussion of the ideas presented here. Thanks also to my native informants, in particular, Luda Shleyfer Lavine, Ora Matushansky and Natasha Reed.

References

- Aoun, J. & Y.-H. A. Li (1993). *Syntax of scope*. MIT Press, Cambridge, MA.
- Beghelli, F. & T. Stowell. (1997). Distributivity and negation: The syntax of *each* and *every*. Szabolcsi, A. (ed.), *Ways of scope taking*, Kluwer, London:, pp. 71-107.
- Babby, L.H. (1980). *Existential sentences and negation in Russian*. Karoma, Ann Arbor, MI.
- Babby, L.H. (1994). A Theta-theoretic analysis of adversity impersonal sentences in Russian. Avrutin, S., S. Franks & L. Progovac (eds.), *FASL 2, The MIT Meeting*. Michigan Slavic Publications, Ann Arbor, MI, pp. 25-67.
- Babyonyshev, M. (1996). *Structural connections in syntax and processing: Studies in Russian and Japanese*. Diss, MIT, Cambridge, MA.
- Bailyn, J. (1997). Genitive of negation is obligatory. Browne, W. et al. (eds.), *FASL 4, The Cornell Meeting*. Michigan Slavic Publications, Ann Arbor, MI, pp. 84-114.
- Brown, S. (1999). *The syntax of negation in Russian*. CSLI, Stanford.
- Brown, S. & S. Franks. (1995). Asymmetries in the scope of Russian negation. *Journal of Slavic Linguistics*, 3 :2, pp. 239-287.
- Chomsky, N. (1995). *The minimalist program*. MIT Press, Cambridge, MA.
- Chomsky, N. (1998). Minimalist Inquiries. Ms, MIT, Cambridge, MA.
- Chomsky, N. (1999). Derivation by phase. Ms, MIT, Cambridge, MA.
- Chvany, C. (1975). *On the syntax of BE-sentences in Russian*. Slavica, Cambridge, MA.
- Citko, B. (2000). *Parallel merge and the syntax of free relatives*. Diss, SUNY, Stony Brook.
- deHoop, H. (1992). *Case configuration and noun phrase interpretation*. Diss, University of Groningen.
- Diesing, M. (1992) *Indefinites*. MIT Press, Cambridge, MA.
- Harves, S. & J. Lavine. (1998). Case will get you nowhere. Talk presented at Princeton University WIP series.
- Haspelmath, M. (1997). *Indefinite pronouns*. Clarendon Press, Oxford.
- Heim, I. (1982). *The semantics of definite and indefinite noun phrases*. Diss, University of Massachusetts, Amherst.
- Kondrashova, N. (1996). *The syntax of existential quantification*. Diss, University of Wisconsin, Madison.
- Lavine, J. (2000). *Topics in the syntax of nonagreeing predicates in Slavic*. Diss, Princeton University.
- May, R. (1985). *Logical Form: Its structure and derivation*. MIT Press, Cambridge, MA.
- Padučeva, E. (1974). *O semantike sintaksisa*. Nauka, Moscow.
- Pereltsvaig, A. (1999). The genitive of negation and aspect in Russian. Ms, McGill University, Montréal.
- Pesetsky, D. (1982). *Paths and categories*. Diss, MIT, Cambridge, MA.
- Ravič, R. (1971). O vybore padeža prjamogo dopolnenija pri perexodnyx glagolax s otricaniem v russkom jazyke. *Fonetika. Fonologija. Grammatika. K semidesjatiletiju A. A. Reformatskogo*, pp. 254-265.
- Restan, Per A. (1960). The objective case in negative clauses in Russian: the genitive or the accusative? *Scando-Slavica VI*, Copenhagen.
- Schoorlemmer, M. (1996). *Participial passive and aspect in Russian*. Diss, Utrecht University.
- Timberlake, A. (1975). Hierarchies in the genitive of negation. *SEEJ*, 19, pp. 123-138.

The syntax-pragmatics interface and Finnish ditransitive verbs

Elsi Kaiser

This paper presents an analysis of the ditransitive constructions in Finnish, a language with flexible word order. I argue that the base-generated order of Finnish ditransitive structures, which permit both direct object-indirect object (DO-IO) order and IO-DO order, is in fact DO-IO. According to my analysis, IO-DO order is generated by discourse-driven scrambling of the IO. These claims are supported by evidence from reciprocal binding, idioms and pragmatic word order patterns.

1. Introduction

In this paper I present an analysis of the ditransitive constructions in Finnish, a language which permits both IO-DO (indirect object-direct object) and DO-IO order. I claim that the base-generated order of Finnish ditransitive structures is DO-IO, and that the IO-DO order is generated by scrambling the IO over the DO to a VP-external position. According to my analysis, this movement is driven by pragmatic factors.

In section 1 of the paper, I discuss some basic characteristics of Finnish ditransitives. In section 2, data from reciprocal binding in ditransitive constructions are analyzed. Section 3 provides an introduction to the pragmatic differences between DO-IO order and IO-DO order. Section 4 explores these distinctions in more depth and also includes the results of a preliminary corpus study, as well as a discussion of word order in idioms. Section 5 is a preliminary implementation of my analysis, and section 6 is the conclusion.

1.1 Finnish ditransitive constructions¹

Finnish has canonical subject-verb-object (SVO) order, but all six possible word orders are grammatical in the appropriate contexts (Vilkuna 1995). Finnish has no articles, and word order helps to encode things such as definiteness, which are encoded by articles in other languages (see e.g. Chesterman 1991). In ditransitive structures, both IO-DO and DO-IO orders are possible. The direct object usually bears accusative or partitive case marking and the indirect object is usually marked with allative case. Finnish has no dative case, and the allative case “expresses movement ‘towards a surface’ or ‘to someone’ ” (Karlsson 1999:119).² (In this section, the articles in the examples are left unspecified. The correlation between argument order and ‘definiteness’ is addressed in sections 3 and 4.)

- (1)a. Minä annoin miehelle kirjan. (IO-DO)
I-NOM gave man-ALL book-ACC.
'I gave a/the man a/the book.'
- (1)b. Minä annoin kirjan miehelle. (DO-IO)
I-NOM gave book-ACC man-ALL.
'I gave a/the book to a/the man.'

These characteristics raise a number of questions. First, given that Finnish allows both DO-IO and IO-DO orders and permits scrambling, we would like to know whether scrambling generates one of the two orders. If so, which order is base-generated? Furthermore, if one of the orders is generated by scrambling, what drives this movement, and where does the scrambled constituent land? The proposal I present in this paper – which extends and builds on Kaiser (2000b) – argues that DO-IO is the base-generated order, and IO-DO is due to scrambling of the IO to a position reserved for constituents related to the preceding discourse.

2. Binding

In this section, we analyze reciprocal binding data for Finnish ditransitive verbs, and we will see that the asymmetries we encounter are best explained by assuming

¹ I use the term ‘ditransitive’ to refer to Finnish verbs with two ‘postverbal’ arguments, in order to be as neutral as possible.

² The allative case is also used in ‘non-ditransitive’ constructions (see Karlsson 1999:119). Also, locative ‘indirect objects’ usually have illative case, which expresses “ ‘(direction) into,’ sometimes ‘end point of a change or movement’ ” (Karlsson 1999:112).

(a) Minä lähetin kirjan Suomeen.
I-NOM sent book-ACC Finland-ILLAT
'I sent a/the book to Finland.'

Syntax and pragmatics of Finnish ditransitive verbs

underlying DO-IO order. As the examples in (2) illustrate, in DO-IO order, the DO can bind a reciprocal anaphor in the IO, and in the IO-DO order, when the IO binds a reciprocal anaphor in the DO, the sentence becomes more marked, but it is still grammatical. In the IO-DO order, the DO can bind a reciprocal anaphor in the IO, as shown in (3). However, in the DO-IO order, the IO cannot bind a reciprocal anaphor in the DO (ex. (3b)).³

- (2)a. DO-IO_{recipr.}
Minä esittelin Liisan ja Marin toisilleen.
I-NOM introduced Liisa-ACC and Mari-ACC each-other-ALL-Px3⁴
'I introduced Liisa and Mari to each other.'
- (2)b. ? IO-DO_{recipr.}
? Minä esittelin Liisalle ja Marille toisensa.
I-NOM introduced Liisa-ALL and Mari-ALL each-other-ACC-Px3.
'I introduced to Liisa and Mari each other.'
- (3)a. ? IO_{recipr.}-DO
? Minä esittelin toisilleen Liisan ja Marin.
I-NOM introduced each-other-ALL-Px3 Liisa-ACC and Mari-ACC.
'I introduced to each other Liisa and Mari.'
- (3)b. * DO_{recipr.}-IO
* Minä esittelin toisensa Liisalle ja Marille.
I-NOM introduced each-other-ACC-Px3 Liisa-ALL and Mari-ALL
'I introduced each other to Liisa and Mari.'

A possible way of capturing this binding asymmetry is to posit that DO-IO is the underlying order, and that in sentences with IO-DO order, such as (3a), the indirect object has scrambled leftward over the direct object. This movement can create new binding relations (ex. (2b)), and thus patterns like A-movement. Now, to account for the grammaticality of ex. (3a), where the DO can bind a reciprocal anaphor in the IO although the surface order is IO-DO, we could posit that the IO can reconstruct below the DO (or that a copy of it is located there). In this regard, then, the movement patterns like A-bar movement. This co-occurrence of A and A-bar

³ Takano (1998), citing Kitagawa (1994) and Pesetsky (1995), notes that English behaves in the opposite way:

(a) *I showed each other's mothers the babies. (IO-DO is ungrammatical)

(b) ?I showed each other's babies to the mothers. (DO-IO is marginal, almost grammatical.)

Kitagawa (1994) concludes that IO-DO is the underlying order, and cases like (b) involve reconstruction of the DO to a position below the IO. By the same logic, we can suggest that Finnish has DO-IO order.

⁴ Px3 stands for 'third person possessive suffix.' Finnish has a system of possessive suffixes which are part of the morphology of reciprocals and reflexives, and also used to show possession in contexts such as 'John read his book.' (See Nelson 1998, *inter alia*)

properties has often been observed for scrambling (see e.g. Takano 1998 on Japanese). The ungrammaticality of (3b) is expected because no scrambling has occurred and the antecedent IO does not c-command the reciprocal DO.

It is worth noting that the binding asymmetries illustrated in (2) and (3) cannot be explained as straightforwardly under the assumption that IO-DO is the underlying order, or under the assumption that both orders are base-generated. The reasons for the grammaticality of (3a) and the markedness of (2b) are left unclear under these approaches (see Kaiser 2000b for detailed discussion).

Another way of testing binding relations in ditransitive structures is by means of variable binding. In Finnish, however, variable binding patterns differently from reciprocals in that it simply requires surface c-command relations to hold between the QuNP and the bound variable (at least when an overt possessive pronoun is used). In other words, when the binder does not precede the bindee in overt syntax, the sentence is ungrammatical (see Kaiser 2000a for examples). The reasons for the differences in the behavior of reciprocal anaphora and bound variables are not altogether clear. A possible reason could be the nature of the Finnish possessive system. In Finnish, possession is encoded by a system of possessive pronouns and possessive suffixes (Px's). The interactions between these two elements, combined with the fact that Finnish tends to disprefer cataphoric pronouns in general (Hakulinen and Karlsson 1988:317) may be part of the reason for the difference in the behavior of variable binding and reciprocals. In the variable binding examples, where overt possessive pronouns are present in addition to the possessive suffixes, surface order seems to play a more important role than in the reciprocals where there are no possessive pronouns. Clearly, further research is needed in this area.

3. Pragmatic considerations

In this section, we will see that the DO-IO and IO-DO orders differ pragmatically and that the asymmetry can be most straightforwardly captured by positing underlying DO-IO order. The terms 'old' and 'new' information are central to this section, so let us briefly consider what they mean. In this paper, when an entity is described as 'old information,' it is discourse-old, i.e. it has already been mentioned in the discourse (Prince 1992). The term 'new information' is used for entities that have not yet been mentioned.⁵

⁵ I am using this discourse-based, 'relativized' notion of information status because Finnish permits proper names to occur in either order (IO-DO or DO-IO). When a speaker refers to a person by name, it can be inferred that the speaker and the hearer know about that person, i.e. the person is not 'new information' to the speaker or the hearer. However, the person can be 'new information' to the current discourse in the sense that he/she has not been mentioned yet. In other words, information that is known to the hearer but has not been mentioned in the particular discourse at hand counts as 'new

Syntax and pragmatics of Finnish ditransitive verbs

The two possible word orders in ditransitives are not pragmatically equivalent. This becomes apparent when we consider question-answer pairs. Sentence (4b), with IO-DO order, is an appropriate answer to a question such as (4a) which asks for the direct object and treats the indirect object as ‘known information’. In contrast, sentence (4d), with DO-IO order, is an appropriate answer to question (4c), which asks for the indirect object and treats the direct object as ‘known.’ The opposite pairing is infelicitous.

- (4)a. Mitä sinä annoit miehelle?
What-ACC you-NOM gave man-ALL?
‘What did you give to the man?’
- (4)b. Minä annoin miehelle kirjan. (IO-DO)
I-NOM gave man-ALL book-ACC.
‘I gave the man a book.’
- (4)c. Kenelle sinä annoit kirjan?
Who-ALL you-NOM gave book-ACC?
‘Whom did you give the book?’
- (4)d. Minä annoin kirjan miehelle. (DO-IO)
I-NOM gave book-ACC man-ALL.
‘I gave the book to a/the man.’

In sum, it seems that if one of the arguments is old, known information, and the other one is new information, the old one occurs first and the new one later. Similar phenomena are attested in other languages as well (e.g. see Givón 1984 on Israeli Hebrew).

However, the question-answer pairs leave an important question unanswered: What happens when both of the arguments are old, or both are new? What order do they occur in? Vilkuna (1989) suggests that “If two adjacent phrases A and B are equal in information status (both old or both new), their mutual order reflects their syntactically unmarked order” (Vilkuna 1989:66). This hypothesis receives support from the ordering facts of subjects and objects in transitive sentences, as illustrated in Table 1 (see Chesterman 1991).

Table 1: Information status and word order in Finnish

	Object-new	object-old
subject-new	SVO	OVS
subject-old	SVO	SVO

‘information in the ditransitive construction – as does information that is new to the hearer. See Prince (1992) for further discussion concerning the distinction between hearer-new and discourse-new.

When a subject and an object have the same information status (both old or both new), they tend to occur in the order *SVO*. Moreover, if the subject is old information and the object is new information, the order is again *SVO*. The only time when *OVS* order is more felicitous than *SVO* order is when the subject is new and the object is old.

Let us now return to the ditransitives. On the basis of Vilkuna's suggestion, we would predict that when the two postverbal arguments of a ditransitive verb have the same information status, their ordering reflects the base-generated order. If *DO-IO* is the base-generated order, then we predict that two arguments of equal information status should occur most felicitously in *DO-IO* order. Alternatively, if *IO-DO* is the basic order, configurations in which both arguments have the same information status should occur with this order. If both orders are base-generated, then we would presumably predict that both orders are equally felicitous when the two postverbal arguments have the same information status. In the next section we will take a closer look at the pragmatic word order patterns of Finnish ditransitives, and we will see that the evidence lends support to the claim that *DO-IO* order is base-generated.

4. A closer look at the pragmatics of word order

4.1 Informant judgments

To test informants' intuitions concerning the pragmatic ordering factors, I presented them with various ditransitive sentences with *IO-DO* and *DO-IO* orders, where the postverbal arguments were NPs, pronouns, NPs preceded by demonstratives etc. Based on their comments as to which interpretations were possible for each sentence and which sentences sounded ungrammatical, Table 2 below was constructed.⁶

As expected on the basis of the question-answer pairs, when the *DO* is old and the *IO* new, the most felicitous order is *DO-IO* (cell 2). Similarly, as expected, when *IO* is old and *DO* is new, the order tends to be *IO-DO* (cell 4). Moreover, according to my informants, the default order when both arguments have the same information status tends to be *DO-IO* (cells 1,3).⁷ In light of these data and

⁶ For reasons of space, I am unable to include the actual sentences that motivate Table 2 (see Kaiser 2000a for details). Only sentences with normal intonation and prosody were considered.

⁷ It may be the case that the relative information status of two entities plays a role as well. In other words, an entity which was just mentioned in the preceding sentence may well be treated as more saliently 'older' than an entity that was mentioned five sentences ago – even though both are, strictly speaking, discourse-old. This is discussed more below.

Syntax and pragmatics of Finnish ditransitive verbs

Vilkuna's hypothesis about ordering and information status, it seems that DO-IO is the basic order, and IO-DO arises only when the IO is old and the DO new.⁸

Table 2: Information status and word order in ditransitives

	IO-new	IO-old
DO-new	DO-IO (1)	IO-DO (4)
DO-old	DO-IO (2)	DO-IO (3)

A possible way of capturing this pragmatic asymmetry is to treat DO-IO as the base-generated order and IO-DO as an order that is derived by pragmatically-motivated scrambling of an old IO. We could thus posit that, in general, the older of the two postverbal arguments scrambles leftward. When both arguments are old information, it seems that they have DO-IO order, which could be interpreted as a sign that both IO and DO have scrambled out of VP. We will discuss this proposal in more depth in section 5, but we will first take a look at the results of the corpus study to see if they support the informant judgments.

4.2 Preliminary corpus study

In this section, I present the results of a preliminary corpus study based on 149 examples of the verb *antaa* 'give' found in selections from three novels, two magazines, and a newspaper (available on-line at the University of Helsinki Language Corpus Server, <<http://www.ling.helsinki.fi/uhlcs/>>). The number of tokens in the corpus is fairly low because only cases where both IO and DO are postverbal are included in the analysis. This is done because, in sentences with [IO S V DO] or [DO S V IO] order, we simply cannot determine the relative (postverbal) ordering of DO and IO. Future work with a larger corpus is clearly needed, but even a small corpus can provide some indication of the validity of the informant judgments.

4.2.1 Pronominal forms

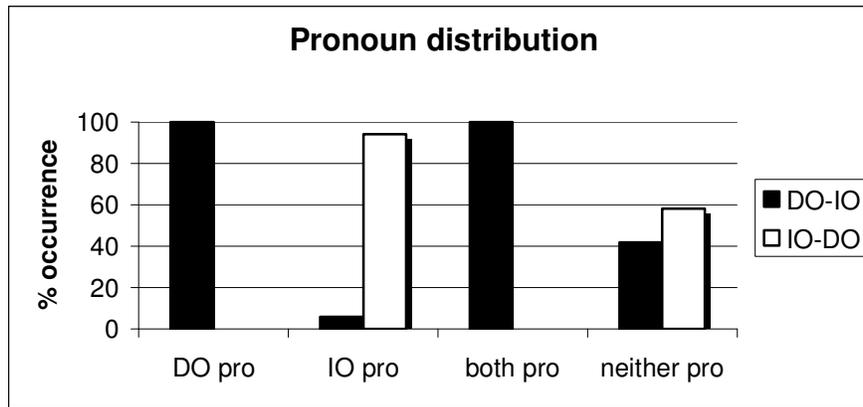
Table 3 presents a basic breakdown of the data in terms of the pronominal status of the arguments. Overall, the corpus data parallels informant judgments. Informants, when asked about sentences with one pronominal postverbal argument and one full NP postverbal argument, preferred to have the pronominal argument occurring to the left of the full NP argument. The same tendency was found in the corpus data. In cases where only DO is a pronoun, the order is DO-IO (3/3 occurrences), and in

⁸ See Vilkuna (1989) for a slightly different take on the pragmatics of Finnish ditransitives.

cases where IO is a pronoun, the order tends to be IO-DO (49/52 occurrences). There is only one example in which both DO and IO are pronouns, but, as predicted on the basis of informant intuitions, it has the order DO-IO.⁹

Table 3. Pronoun distribution

	DO-IO	IO-DO	Total
Only DO pronoun	3 (100%)	0 (0%)	3
Only IO pronoun	3 (5.8%)	49 (94.2%)	52
Both pronouns	1 (100%)	0 (0%)	1
Neither pronoun	39 (41.9%)	54 (58.1%)	93
Total	46	103	149



4.2.2. Full NP forms

Out of 149 examples, there are 93 cases in which both DO and IO are full NPs. If we exclude sentences with one or more idiomatic postverbal arguments,¹⁰ we are left with 81 tokens. In these cases, one needs to look at the context in order to determine the relative information status of the two postverbal arguments. I coded the arguments as ‘old’, ‘new’ or ‘known.’ As mentioned earlier, an argument that is ‘old’ has already been mentioned in the preceding discourse. A ‘new’ argument is has not yet been mentioned. ‘Known’ arguments have not been mentioned but the

⁹ When considering the word order patterns of pronouns, considerations of cliticness are clearly important. Stress-based tests suggest that Finnish pronouns in ditransitive constructions are not clitics, since it seems that both DO and IO pronouns can be stressed. These issues, however, would benefit from further research. Thanks to Kieran Snyder for bringing this to my attention.

¹⁰ It is not clear what kind of information status, if any, to assign to idiomatic arguments. See section 4.3 for a discussion of the idea that purely idiomatic constituents which are nonreferential have no real discourse status.

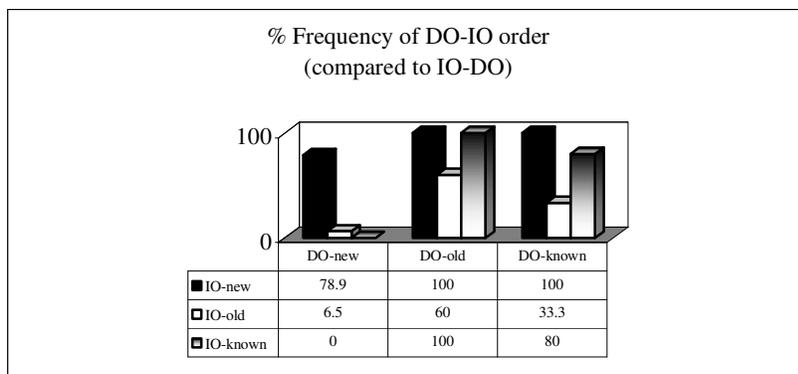
Syntax and pragmatics of Finnish ditransitive verbs

hearer/reader would be expected to know them (e.g. the name of the president) be able to infer their existence (cf. Prince 1981) from something that was already mentioned (e.g. mention of ‘a book’ makes ‘the cover’ inferrable).

The data for the full NP tokens is summarized in Table 4. If we compare these numbers to the informant judgements presented in Table 2, we see that, for the most part, the results are the same. As shown in cell 1 of Table 4, when both IO and DO are new, the order tends to be DO-IO (15/19 occurrences). When IO is new and DO is old (cell 2), the order tends to be DO-IO (3/3), and when IO is old and DO is new, the order is usually IO-DO (29/31), as shown in cell 4. So far, these ordering facts are what we would expect, given the data presented above.

Table 4. Pragmatic ordering tendencies (Examples with idioms or pronouns not included. Underling indicates the most frequent order for each configuration.)¹¹

	DO-new	DO-old	DO-known	Total
IO-new	<u>DO-IO 15</u> , IO-DO 4 (cell 1)	<u>DO-IO 3</u> , IO-DO 0 (cell 2)	<u>DO-IO 1</u> , IO-DO 0 (cell 3)	<u>DO-IO 19</u> , IO-DO 4
IO-old	DO-IO 2, <u>IO-DO 29</u> (cell 4)	<u>DO-IO 3</u> , IO-DO 2 (cell 5)	DO-IO 1, <u>IO-DO 2</u> (cell 6)	DO-IO 6, <u>IO-DO 33</u>
IO-known	DO-IO 0, <u>IO-DO 12</u> (cell 7)	<u>DO-IO 2</u> , IO-DO 0 (cell 8)	DO-IO 4, IO-DO 1 (cell 9)	DO-IO 6, <u>IO-DO 13</u>
Total	DO-IO 17, <u>IO-DO 45</u>	<u>DO-IO 8</u> , IO-DO 2	<u>DO-IO 6</u> , IO-DO 3	DO-IO 31, <u>IO-DO 50</u>



When we consider cases where both IO and DO are old (cell 5), the hypothesized pattern seems to hold only very weakly. In 3 out of 5 cases, the order is DO-IO, as we would predict on the basis of informant judgments. In other words, there seem to be two counterexamples to the generalization that if both arguments are old, they have the order DO-IO. The numbers are so small that it is difficult to

¹¹ It is worth emphasizing that many of the numbers in this table are obviously very small, and further work with a larger corpus is needed. The data presented here are intended to serve merely as a starting point for a larger-scale corpus study.

draw firm conclusions one way or the other, but it is worth taking a closer look at these sentences, as they raise some interesting questions.

- (5)a. Siellä olisi tilaa antaa vaikka joka tytölle oma huone.
There be-COND room-PART give-INF even each girl-ALL own room.
'There's enough space so that we could give each girl a room of her own.'
(from a novel by Joensuu 1986)
- b. UKK:n kaveri Kalle Kaihari on 25 vuoden ajan säilyttänyt
UKK-GEN friend-NOM K. K. is 25 years-GEN time-GEN kept
'UKK's friend Kalle Kaihari has for 25 years kept
omana tietonaan tosisuurta salaisuutta: Kuka antoi
own-ESS knowledge-ESS-Px3 huge-PART secret-PART: Who-NOM gave
a huge secret: Who gave
Kekkoselle ratkaisevan 151 äänen presidentinvaaleissa
Kekkonen-ALLAT decisive-ACC 151st vote-ACC president-elections-INNESS
Kekkonen the decisive 151st vote in the presidential election...'
(from Helsingin Sanomat, file hs2)

Example (5a) has the order IO-DO and both postverbal arguments are discourse-old. However, it is worth noting that the sentence contains a scopal element 'each girl' as well as the NP 'own room.' Even though 'own room' is not bound by 'each girl' in a binding-theoretic sense, the meaning of the sentence is such that 'each girl' has scope over 'own room' (i.e., there are multiple girls, each with her own room). If we were to reverse the word order, this scopal interpretation would not be ruled out but it would become more difficult. Thus, the use of IO-DO word order when both arguments are discourse-old can presumably be induced by the 'scopal needs' of a particular sentence. In fact, in light of (5a) and the examples of reciprocal binding discussed earlier, it seems reasonable to hypothesize that syntactic or semantic factors, such as binding or certain scopal readings, can override the pragmatic ordering preferences.

The second potential counterexample, (5b), also has IO-DO order with both postverbal arguments being 'old' information. However, they have different degrees of relative oldness: the IO was mentioned very recently in the preceding text, whereas the DO was mentioned much earlier in the article. If we think of 'oldness' in terms of saliency or degree of activation of the referent, then the IO in (5b) is more salient than the DO. In this configuration, then, it is not surprising that IO precedes DO. In fact, it might well be the case that instead of defining arguments as 'old' or 'new', we would do better to define them in more gradient terms relative to each other. We could thus reformulate the notion 'old' as 'more salient/more recently mentioned than the other postverbal argument.' This focus on the importance of *relative* – as opposed to *absolute* – oldness of two arguments is

Syntax and pragmatics of Finnish ditransitive verbs

not a new claim, and has been discussed by Birner (1994) with respect to inversion in English, and also by Birner & Mahootian (1996) for Farsi inversion, *inter alia*.

In addition, another factor that is relevant when considering examples such as (5b) is the length of the constituents. Snyder (2000) found that in English, when the IO is ‘old’ information, the heaviness of the arguments (measured in syllables per NP) influences their ordering, such that “in cases where the recipient is not hearer-new, the heavier of the two objects occurs in the second position” (Snyder 2000:11). Even though the pragmatic patterns of Finnish ditransitives do not seem to be exactly the same as those of English (see Snyder 2000, Arnold *et al.*, 2000 for details), it seems likely that heaviness plays a role in Finnish as well. Thus, it might be the case that in configurations where one argument is significantly longer than the other and both are ‘old’ information, the longer argument occurs last.

Thus, it is not clear whether the counterexamples really are counterexamples. They raise a number of interesting questions, and suggest that the pragmatic ordering tendencies – while important – are not the only factors which influence argument order in ditransitive constructions. Clearly, a lot of work remains to be done and the discussion in this section is only speculative.

Let us now consider what happens if one of the arguments is ‘known’ information. As mentioned above, ‘known’ arguments are ones that have not been mentioned but that the hearer/reader would be expected to know, or arguments whose existence can be inferred from something that was already mentioned. Intuitively, one might expect ‘known’ information to fall somewhere between ‘new’ and ‘old’ – although it has not yet been mentioned in the discourse (like ‘old’ information), it is not altogether ‘new’ to the hearer. Indeed, the numbers in Table 4 show that, when a known argument is compared to a new argument, it behaves like ‘old’ information, but when a known argument is pitted against an old argument, it patterns like ‘new’ information.

4.3 Some speculation about idioms

Further support for the pragmatic ordering tendencies, as well as the claim that DO-IO is the base-generated order,¹² comes from idioms. Consider (15a), which literally means to give someone a pair of gloves, but idiomatically means to turn down a proposal, an invitation to dance etc. In light of the scrambling analysis

¹² Scope asymmetries also provide evidence in support of this claim, as discussed in Kaiser (2000b). Finnish ditransitives with DO-IO order permit both surface and inverse scope, but ditransitives with IO-DO order only have surface scope. Given that, in Finnish, the IO in IO-DO order (e.g. ‘I gave girl-ALL every-ACC book-ACC’) must be interpreted as discourse-old (i.e. referring to a certain girl, it is not surprising that it cannot be distributed over scopally (see Kaiser 2000b). See Brandt (1999) regarding this phenomenon in English.

presented in this paper, we might hypothesize that idiomatic constituents cannot scramble since they are not really referential and have no information status. This, combined with the claim that DO-IO is the basic order, predicts that in a sentence with an idiomatic DO, the order IO-DO arises when IO is old and has scrambled leftward, and the order DO-IO occurs when IO is new and has not scrambled. In other words, in sentences with an idiomatic reading of ‘gloves,’ the discourse status of the IO is predicted to be constrained by the word order.

- (5)a. antaa jollekulle rukkaset
give someone-ALL gloves-ACC
‘to give some gloves’ (*idiom*: turn down a proposal/ invitation to dance, etc.)
- b. IO-DO_{idiom}
Liisa antoi kerjäläiselle rukkaset.
Liisa gave beggar-ALL gloves-ACC
‘Liisa gave the/a beggar gloves.’
- c. DO_{idiom}-IO
Liisa antoi rukkaset kerjäläiselle.
Liisa gave gloves-ACC beggar-ALL
‘Liisa gave gloves to the/a beggar.’

This prediction is indeed supported by informant judgments. When (5b) has an idiomatic reading, the beggar is judged to be discourse-old information, but when (5c) is interpreted with the idiomatic meaning, the beggar is discourse-new information. (All these sentences also have non-idiomatic interpretations.) Thus, the predictions made by the DO-IO base-order approach are confirmed. Under the view that IO-DO is the base-generated order, it is not clear what could be motivating the DO(idiom)-IO order in (5c), nor is it clear why the beggar in (5b) has to be interpreted as discourse-old information. In sum, the behavior of idioms supports the DO-IO analysis.

5. Analysis

A possible way of capturing the asymmetrical behavior of Finnish ditransitives is to posit that DO-IO is the base-generated order and IO-DO is derived by pragmatically-motivated scrambling. According to this analysis, an old IO scrambles over the DO and lands in a VP-external position. An old DO also scrambles to a VP-external landing site. When both arguments are old information, they tend to have the order is DO-IO, which suggests that both IO and DO have scrambled out of VP. Alternatively, it might be that if both are old information but one is relatively ‘older’ than the other, then the ‘older’ one scrambles.

Syntax and pragmatics of Finnish ditransitive verbs

- (6)a. Basic: DO IO
- b. Derived: IO_{old} DO t_{IO}
- c. Derived: DO_{old} t_{DO} IO

5.1 Ideas for implementation

If we hypothesize that there exists some kind of landing site(s) outside VP for the IO and DO, we need to face the question, what exactly is this landing site? Two possible approaches are discussed here. First, one could argue that there is an 'Old-Phrase' outside VP which is reserved for old constituents, and that old IOs and DOs can move to spec-Old-P. If both are old, then presumably the closest one (or oldest one) moves to spec-Old-P, or closest one moves first and other one tucks in later, in the sense of Richards (1997). However, this approach has the disadvantage of forcing us to posit the existence of an additional projection.

Alternatively, one could adopt an approach inspired by the work on object shift. Object shift is movement of a pronoun or old/specific object DP out of VP (see Bobaljik & Jonas 1996). It is often obligatory when possible, but this depends on the speaker and the language (Bobaljik 2000:2). The ideas of Collins & Thráinsson (1996) are especially relevant, as they argue that word order patterns in Icelandic double objects involve overt movement to AGR_o projections. I would like to suggest that perhaps in Finnish as well, movement out of VP in ditransitives is overt movement to spec of AGR_{io}P/AGR_{do}P. In other words, in addition to the classic case feature, AGR_{io}P and AGR_{do}P can have an [old] feature which attracts old constituents. New constituents do not move overtly to spec-AGR_{io}/doP, just like indefinite objects do not undergo object-shift in Icelandic (Bobaljik 2000:12). However, the details of this proposal need to be worked out in order to see if it is a feasible approach.

There are some interesting parallels that can be drawn between the 'scrambling of old arguments' discussed in this paper, and the information-packaging analysis that Holmberg & Nikanne (2000) propose for Finnish transitive SVO and OVS sentences. According to Holmberg & Nikanne, all arguments have a feature [+/-Foc], where [-Foc] means that the argument is interpreted as "part of the presupposition", and [+Foc] means that "the argument is interpreted as the information focus." In other words, [-Foc] arguments are roughly comparable to 'old' or 'known' information, and [+Foc] arguments to 'new' information. After establishing this distinction, Holmberg & Nikanne suggest that in Finnish, "arguments which are not part of the information focus must ultimately be moved out of the focus domain," which they define as TP. Thus, 'old' information must move out of TP. This approach does not distinguish [-Foc] subjects from [-Foc] objects, and both "subject and nonsubject topics land in the same position in

Elsi Kaiser

Finnish [...] in specFP” (Holmberg & Nikanne 2000:19, where FP corresponds roughly to AGRsP). Thus, the idea is that in Finnish, the projection that is usually thought of as AGRs is in fact a landing site for ‘old’ ([-Foc]) subjects and objects.

Along similar lines, I would like to suggest that in Finnish ditransitive constructions, a known/old argument (i.e. [-Foc]) must move to a higher position – one that is traditionally thought of as an AGR position, but that seems to be functioning like a landing site for ‘old’/‘known’ information. This approach has the advantage of providing a unified account for this type of movement in transitive and ditransitive sentences.

6. Conclusion

In this paper I provide an analysis of some syntactic and pragmatic aspects of the Finnish ditransitive construction. On the basis of reciprocal binding and pragmatic word order patterns, I suggest that the Finnish ditransitive construction, which permits both IO-DO and DO-IO orders, has DO-IO as its underlying order.

Acknowledgements

I would like to thank Maribel Romero, Ellen Prince, Mark Arehart, Tonia Bleam, Chung-hye Han, Satu Manninen, Tom McFadden, Kimiko Nakanishi, Kieran Snyder and Yuji Tanaka for many helpful comments. I would also like to thank my Finnish informants; Juhani Anttila, Ulla Anttila, Timo Harvia, Tiina Harvia-Oikarinen, Antti-Jussi Heilala, Tarja Heilala, Matias Heilala, Samuli Heilala, Jaana Heino, Matti Hollberg, Sampsa Jolma, Mark Kaunisto, Pasi Kivinen, Ilkka Mäkelä, Timo Oikarinen, Tiina Pajunen, Olli-Matti Sopenen, Sanna Turakka and Katja Vahtikari. I’d like to thank the University of Helsinki for access to the University of Helsinki Language Corpus Server <<http://www.ling.helsinki.fi/uhlcs/>>. All errors are, of course, my own. Earlier incarnations of parts of this work were presented at the 12th Student Conference in Linguistics, the Peripheral Positions conference at the University of York, and the 75th LSA Annual Meeting. I’d like to thank those audiences, as well as the ConSOLE audience, for their helpful comments.

References

- J. Arnold, J. E., T. Wasow, T. Losongco, & R. Ginstrom. (2000). Heaviness vs. newness: The effects of structural complexity and discourse status on constituent ordering. *Language* 76(1), pp. 28-55.
- Barss, A. & H. Lasnik (1986). A note on anaphora and double objects. *Linguistic Inquiry* 17(2), pp. 347-354.
- Bayer, J. & J. Kornfilt (1994). Against scrambling as an instance of Move-alpha. Corver, N. & H. van Riemsdijk (eds.), *Studies on scrambling*. Mouton de Gruyter, New York, pp. 17-60.
- Birner, B. (1994). Information status and word order: An analysis of English inversion. *Language* 70, pp. 233-59.

Syntax and pragmatics of Finnish ditransitive verbs

- Birner, B. & S. Mahootian (1996). Functional constraints on inversion in English and Farsi. *Language Sciences* 18, pp. 127-38.
- Bobaljik, J. (2000). *Heads or tails?: On the realization of A-chains*. [Presentation, UPenn, Feb 2000]
- Bobaljik, J. & D. Jonas. (1996). Subject positions and the roles of TP. *Linguistic Inquiry* 27(2), pp.195-236.
- Bruening, B. (to appear). QR obeys superiority: ACD and frozen scope. *Linguistic Inquiry* 32(2).
- Brandt, P. (1999). Scope, topichood and double objects. Todorascu, A. (ed.) *ESLLI Student Session*, pp.17-27.
- Chesterman, A. (1991). *On definiteness: A study with special reference to English and Finnish*. Cambridge: Cambridge University Press.
- den Dikken, M. (1992) *Particles*. HIL, Dordrecht
- Collins, C. & Thráinsson, H. (1996). VP-internal structure and object shift in Icelandic. *Linguistic Inquiry* 27(3), pp. 391-444.
- Givón, T. (1984). *Syntax: A functional-typological introduction*. John Benjamins, Amsterdam/Philadelphia.
- Hakulinen, A. & F. Karlsson (1988). *Nykysuomen lauseoppi*. SKS, Helsinki.
- Heim, I. & A. Kratzer. (1998). *Semantics in generative grammar*. Blackwell, Malden.
- Holmberg, A. & U. Nikanne. (to appear). Expletives, subjects and topics in Finnish. Svenonius, P. (ed), *Subjects, predicates, and the EPP*. Oxford University Press.
- Hoji, H. (1985). *Logical form constraints and configurational structures in Japanese*. [Ph.D. dissertation, University of Washington.]
- Jackendoff, R. (1990). On Larson's treatment of the double object construction. *Linguistic Inquiry* 21(3), pp. 427-456
- Johnson, K. & S. Tomioka. (1997). *Lowering and mid-size clauses*. Proceedings of the Tübingen Workshop on Reconstruction, pp. 177-197.
- Kaiser, E. (2000a). *On the syntax and pragmatics of Finnish ditransitives*. [Ms., UPenn]
- Kaiser, E. (2000b). A first look at the syntactic structure of Finnish ditransitive verbs. *Proceedings of SCIL 12*. MITWPL, Cambridge, Mass.
- Karlsson, F. (1999). *Finnish: an essential grammar*. Routledge, New York.
- Kitagawa, Y. (1994). Shells, yolks and scrambled e.g.s. *Proceedings of NELS 24*, 221-239.
- Larson, R. (1988). On the double object construction. *Linguistic Inquiry* 19(3), pp.335-391.
- Miyagawa, S. (1997). Against optional scrambling. *Linguistic Inquiry* 28(1): 1-15.
- Müller, G. (1992). In support of dative movement. Barbiers, S., M. den Dikken & C. Levelt. *Proceedings of the third Leiden conference for junior linguists*. University of Leiden, Leiden.
- Müller, G & W. Sternefeld. (1994). Scrambling as A-bar movement. Corver, N & H. van Riemsdijk (eds.), *Studies on scrambling*. Mouton de Gruyter, Berlin, pp. 331-385.
- Nelson, D. (1998). *Grammatical case assignment in Finnish*. Garland, New York.
- Pesetsky, D. (1995). *Zero syntax: Experiencers and cascades*. MIT Press, Cambridge.
- Prince, E.F. (1992). The ZPG letter: Subjects, definiteness, and information-status. Mann, W. & S. Thompson (eds.), *Discourse description: Diverse linguistic analyses of a fund-raising text*. John Benjamins, Amsterdam/Philadelphia, pp.295-325.
- Prince, E.F. (1981). Towards a taxonomy of given-new information. Cole, P. (ed.) *Radical Pragmatics*. Academic Press, New York, pp. 223-56.
- Richards, N. (1997) *What moves where in which language?* [Ph.D. dissertation, MIT]
- Snyder, K. (2000). *The pragmatics and syntax of double objects*. [Ms., University of Pennsylvania]
- Takano, Y. (1998). Object shift and scrambling. *Natural Language and Linguistic Theory* 16(4), pp. 817-889.
- Vilkuna, M. (1989). *Free word order in Finnish*. SKS, Helsinki.
- Vilkuna, M. (1995). Discourse configurability in Finnish. É. Kiss, K. (ed.), *Discourse configurational languages*. Oxford University Press, New York, pp. 244-268.

On adjunction of a non-head to a head

Hirohisa Kiguchi

This paper suggests that some heads attract a maximal projection even when the derivation involves head adjunction (or head-movement). In this case, the attracted maximal projection can be adjoined to a head by Uriagereka's (1999) Multiple-Spell-Out. Given this innovation, a possible way to derive postpositions from prepositions will be shown, while dispensing with AGRP and the special status of the Spec-head relation, in order to maintain Kayne's (1994) LCA within the framework proposed in Chomsky (1998). In addition, N-to-D movement in various languages is also explored.

1. Introduction

Kayne's (1994) Linear Correspondence Axiom, which entails specifier-head-complement as the universal order of constituents in human language, assumes that word order obtains by raising the complement to some higher Spec position in so-called "head-final languages". However, since AGRP is eliminated (Chomsky 1995) along with the status of the Spec-head relations as the checking domain (Chomsky 1998), it seems difficult to explain how to raise the complement of PP to some higher Spec position in the case of head-final languages in the current framework. In order for the LCA to be congenial to Chomsky's (1998) framework, I will present the data, which suggest that a non-head may adjoin to a head under certain circumstance.¹ To maintain the general assumption that an adjunction of non-head to a head is banned, I argue that the attracted maximal projection can be adjoined to a head by Uriagereka's (1999) Multiple-Spell-Out. I show that this operation derives postpositions from prepositions without the special status of the Spec-head relations. I will also introduce data from Finnish that not only support my argument but also present some problems for the head-parameter approach. Then, I will attempt to extend this operation to N-to-D movement observed in various languages.

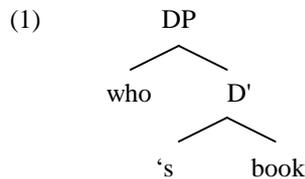
This paper is organized as follows. Section 2, taking on the English possessive construction, introduces a point at issue and suggests that a phrase be adjoined to a head, contrary to the general assumption. Section 3 points out the tension between Chomsky (1998) and Kayne (1994). Then, section 4,

¹ See also Carnie (2000).

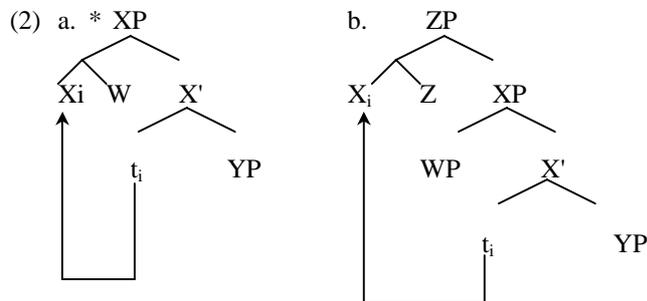
which deals with Japanese, attempts to defend the LCA in Chomsky's (1998) framework, exploiting the proposed operation. Section 5 offers curious data of Finnish, which might be problematic for the head parameter approach. Section 6 discusses some problems for the head parameter approach. Section 7 extends my proposal to the so-called N-to-D movement. Section 8 concludes the paper.

2. English Possessive

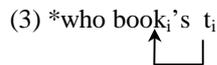
Chomsky (1995) assumes the structure in (1) for DPs containing the possessive *whose book*.



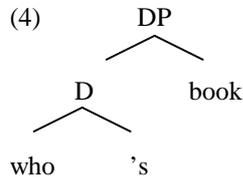
Given the Head Movement Constraint (=HMC), however, a head may move only to the next higher head position as in (2b). If so, how can we incorporate the possessive marker with *who* for a word *whose*? The HMC prevents a head from moving to the head of its Spec as in (2a)



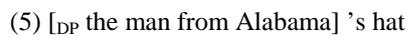
Furthermore, given the structure (1), the incorporation of N in the complement to the possessive marker should happen, for this operation observes HMC. But this is obviously incorrect.



In place of the structure (1), a more proper analysis of this phrase should be the head-to-head adjunction as in (4). Given the structure (4) with the two elements merged within the X⁰-level, we can say that one of these words incorporate into the other. And as a result of this incorporation the word 'whose' is derived.



However, on the other hand, the English possessive marker can also draw a complex DP to it as below.

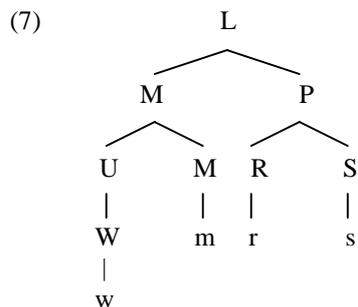


How can we explain phrases like (5) in terms of the analysis in (4)? Namely, the problem is that the adjunction of a maximal projection to a head has been banned in the development of Generative Grammar. Currently, Emonds's Structure Preserving Hypothesis is translated by Chomsky (1995) as 'only YP can adjoin to XP and Y-head can adjoin to X-head'. And it also assumes that 'if some larger unit appears within an X-zero, the derivation crashes' (Chomsky 1995:319). In addition to the assumption in Chomsky (1995), Kayne (1994) also argues that this operation is prohibited by the Linear Correspondence Axiom (=LCA):

(6) Linear Correspondence Axiom (Kayne 1994:33)

Let X, Y be nonterminals and x, y terminals such that X dominates x and Y dominates y. Then if X asymmetrically c-commands Y, then x precedes y.

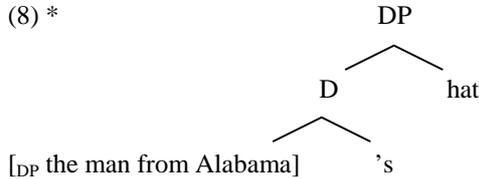
Given the structure below in which M is a head and U a maximal projection adjoined to the head, and w, m, r, and s are terminals. P asymmetrically c-commands W, and since M does not dominate U, according to his version of c-command,² U asymmetrically c-commands R, S. This induces a contradiction. That is, we cannot linearize the terminals in this structure. Hence, LCA also excludes the possibility of this operation.



In any rate, as we have seen, we cannot have the structure of (8).

² See Kayne (1994:15)

(8) *

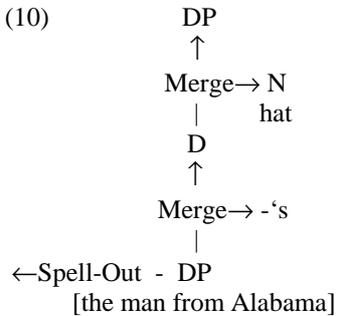


To overcome this puzzle, I suggest that Multiple Spell Out as proposed by Uriagereka (1999) be exploited.

(9) Multiple-Spell-Out (MSO) by Uriagereka (1999):

In order for a phrase to reach a left-branch, it must be Spelled-Out and a Spelled-Out phrase acts like a word.

(10)



Since the DP, *the man from Alabama* has been already Spelled-Out, being like a giant lexical compound, it can be adjoined to the possessive marker, *-s*, just like a typical head-head adjunction. This complex head merges with the noun, *hat*, to form the DP, *the man from Alabama's hat*.

3. Is Syntax Still Antisymmetric? – Chomsky (1998) vs. Kayne (1994)

After Chomsky's (1994) Bare Phrase Structure, the LCA introduced in (6) had to be revisited because, in Bare Phrase Structure, there is no distinction between head and terminal node. Thus, the Bare-Phrase version of Kayne's LCA is modified as below:³

- (11) Given any minimal projections *x* and *y*, *x* precedes *y* iff either (a) or (b):
- (a) *x* asymmetrically c-commands *y*,
 - (b) there is a *z*, such that *z* dominates *x*, and *z* asymmetrically c-commands *y*.

However, some tension arises again between Chomsky's framework and the Antisymmetry of Syntax claimed by Kayne (1994), as Chomsky (1998) proposes in *Minimalist Inquiries* (=MI). In Chomsky (1998), one of the big

³ I am indebted to Max Guimarc for pointing out this part.

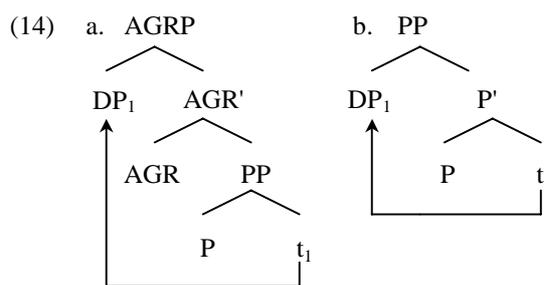
shifts from Chomsky (1995) is the demotion of the status of Spec-head relations:

- (12) ‘We should not expect SPEC-head relations to have any status.’ (MI:65)

Since Chomsky (1995, 1998) discards AGRP, saying, ‘AGRP cannot exist.’ (MI:85), this shift makes it harder for his framework to be congenial to the LCA, which entails Specifier-Head-Complement as a universal order. That is, the other ordering in a language must be derived from movement out of the S-H-C structure. Specifically, in the so-called “head-final languages” like Japanese and Korean, the word order is acquired by raising the complement to some higher spec position, stepping over the head:

- (13) Postposition must be derived by movement of the complement into the Spec of the PP or of a higher functional head. (Kayne 1994:47-48)

Then, since Chomsky (1998) eliminates AGRP and the status of the Spec-head relations as the checking domain, it seems difficult to explain how to raise the complement of PP to some higher Spec position in the case of the head-final languages. In Chomsky’s (1995, 1998) view minimalist movement must be greedy, needs some reason to be executed. Thus, if LCA is valid, how can we motivate the complement of the preposition to move up to the Spec in the framework of MI? MI still allows the movement for Agreement. However, it does not help. Since there is no special status of Spec-head relation, we need not raise the complement to the Spec PP anymore. The main motivation for movement in MI is for the EPP. But it is doubtful that adpositions have the EPP feature. MI assumes that the EPP is in Core Functional Categories, say C, light-*v*, and T. Adpositions seem not to be a member of Core Functional Categories. They belong to a lexical category, following the long-standing tradition. So, (14ab) are not our options in the framework of MI.



Then, if there is no motivation to move the complement of adpositions in MI, we cannot make the LCA to be congenial to the framework of MI. In short, do we need the head parameter after all, in place of the LCA?

To reconcile the LCA with Chomsky’s (1998) framework instead of resorting to head parameter approach, I will attempt to derive postpositions from prepositions, exploiting what I have proposed in the section 2.

4. Japanese Postpositions

Japanese is a strong head-final language and has only postpositions.

(15) Japanese

- a. eki-de
station-at
- b. machi-e
town-to
- c. yubi-de
finger-with
- d. asita-made
tomorrow-until
- e. river-kara
kawa-from

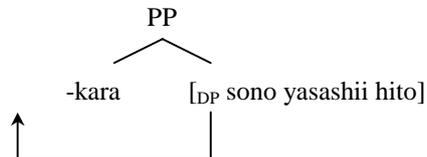
Notice that these postpositions are suffixes, which cannot stand alone. Here, assuming that affixal head motivates head-to-head movement, I suggest that the affixal head, the head P, motivates the complement of PP in Japanese in order to derive Japanese postposition from preposition. Instead of a head, the affixal head attracts a whole phrase. Then, the attracted phrase which is Spelled-Out is adjoined to the affixal head:

- (16) sono yasashii hito-kara
the kind man-from
'from the kind man'

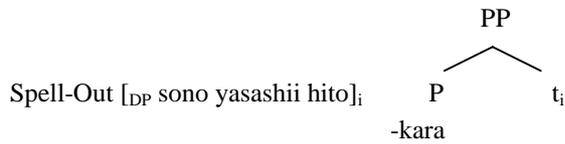
- a. P merges with DP



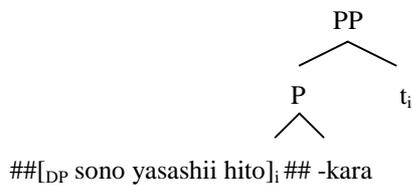
- b. Since P in Japanese is a suffix, it requires some word to be adjoined to it. Notice that this time, it attracts DP, a 'phrase' not a 'head'.



- c. The attracted DP, the complement of PP is Spelled-Out in order to be adjoined to the head P.



- d. The Spelled-Out DP, which acts like a word can be adjoined to the head P without any problem.



As shown above, without AGRP and any special status of the Spec-head relation, the same story which accounts for the English possessive structure in the section 2 is applied to derive the postposition in Japanese from the preposition.

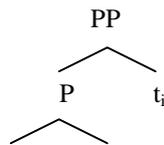
5. Finnish

According to Tuomo Neuvonen (p.c.), Finnish uses postpositions and they are suffixes, which cannot stand alone.⁴

- (17) Postpositions in Finnish
- a. auto-ssa
car-in
'in a car'
 - b. auto-on
car-to
'to a car'
 - c. auto-sta
car-from
'from a car'
 - d. tuoli-lla
chair-on
'on a chair'
 - e. tuoli-lle
chair-to
'to a chair'

⁴ In literature, they are called semantic cases. Nikanne (1993) argues that in fact these are adpositions not case markers.

- f. tuoli-lta
chair-from
'from a chair'
- g. Virpin tuoli-lla
Virpi's chair-on
'on Virpin's chair'



##_{[DP Virpin tuoli]_i} ## -lla

As shown in (17g), what I have argued here lets postpositions in Finnish be derived from preposition. The suffix-nature of P (= *-lla*) motivates its complement to move up. Then the moved phrase is Spelled-out and adjoined to a head. So far, it is only a repetition of the analysis which I have applied to the postpositions in Japanese. But Finnish provides further interesting facts. According to Tuomo Neuvonen (p.c.), (i) Finnish is basically an SVO language, unlike Japanese, which is a strong head-final language:

- (18) Pesin koiran.
washed-1sg dog-GEN-sg
'I washed a/the dog'

(ii) It also has a few prepositions, which are words not prefixes as the ones in English.

- (19) ilman narisevaa tuolia
without squeaky chair
'without a/the squeaky chair'

These irregularities of word order in Finnish are what my story expects. As Kayne (1994) claims that all human languages should be, Finnish is a head-first language.⁵ Then, their "suffixal" prepositions attract their complement to their left adjacent position. On the other hand, the prepositions which are independent words maintain the basic head-first word order.

6. *Is head parameter a way to go?*

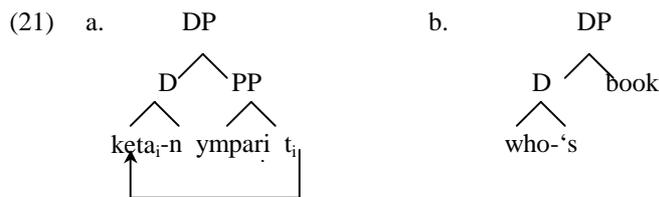
Here, I will show another interesting Finnish fact introduced by Vainikka (1993). There are some adpositions in Finnish, which act either as a postposition, or as a preposition:

⁵ In fact, whether Finnish is head-first language or head-last is still controversial.

(20) Some Finnish adpositions in Vainikka (1993)

- | | | | | | | |
|-----|--------------------|------------|-----|-----------------|-----------|----------------|
| a. | ympari | kenttaa | b. | lahella | maalia | (Preposition) |
| | around | field-PART | | near | goal-PART | |
| | 'around the field' | | | 'near the goal' | | |
| a'. | ketan | ympari | b'. | maalin | lahella | (Postposition) |
| | field-GEN | around | | goal-GEN | near | |

Vainikka (1993) points out that when they are prepositions, they take a partitive NP. If she is right in that partitive is the default case in the complement, the partitive corresponds to the accusative case in English, which appears both in complements of verbs or prepositions. Since Finnish is SVO language, I analyze that the preposition version of these adpositions is the basic form, and the postpositions are the derived form. Vainikka (1993) observes that when these adpositions are postpositions, they generally take a nominal which is case-marked with the genitive marker *-n*. Here, exploiting an analysis of the English possessive phrase that I have introduced in the section 2, I suggest that the genitive marker heads these adpositions in Finnish. Then it attracts the complement of the preposition.



The immediate problem would be that it appears to violate the HMC since the adposition is closer to the D head than its complement. However, since the attracted element is not a head but a phrase, the HMC is not applicable here. Therefore, the adposition does not block the movement. That is, I apply to my account Chomsky's (1994, 1995) explanation of long distance clitic climbing. Curiously, Japanese has the similar construction where genitive suffix also shows up.⁶ Here, I introduce a Japanese correspondence.

- | | | | | | |
|---------|--------------------|-------------|----|-----------------|--------------|
| (22) a. | nohara-no | atari(-de) | b. | gooru-no | chikaku(-de) |
| | field-GEN | around(-at) | | goal-GEN | near(-at) |
| | 'around the field' | | | 'near the goal' | |

In short, Finnish has a set of words which sometimes act in the English pattern, a head-first language and which sometimes act in the Japanese pattern, a head-final language.

In fact, this kind of similarity between Japanese and Finnish can be observed in some other place. For example, let us see both the Finnish and the Japanese version of 'under the house' in which a genitive marker occurs.

⁶ Tuomo Neuvonen pointed out this fact to me.

(23) talo -n a (-lla)
 house -GEN under (-at)
 'under the house'

(24) ie -no sita-de
 house -GEN under-at
 'under the house'

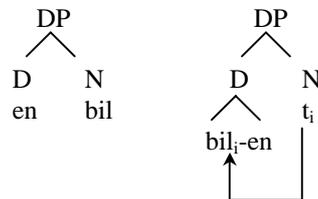
As shown in (23) and (24), the data from both languages are very similar, while Finnish is SVO language and Japanese is SOV. These data cast some doubt on the head parameter approach; If these two languages start from the opposite direction of tree, how can the observed similarities be explained? On the other hand, to the extent that what I have suggested is on the right track, these data support Kayne's (1994) view that Spec-Head-Complement is the universal order of human language and all other ordering is a result of displacement.

7. On N-to-D movement⁷

There are various languages which undergo N-to-D movement. These languages listed in the table below use the suffixed definite article which is attached to the N head. These phenomena are analyzed to be the result of raising the head N to the head D position shown in (25).⁸

	Indefinite article	Definite article
Rumanian	un	-l(e),-a,-i
Danish	en	-en
Icelandic	Ø	-inn
North Swedish	(e)n	-en
Swedish	en	-en

(25) a. en bil b. bilen
 a car car-the
 'a car' 'the car' (Swedish)



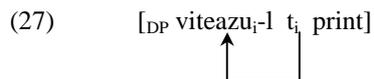
⁷ The data in this section are from Delsing (1993) and Grosu (1988)

⁸ See Delsing (1988, 1989) and Taraldsen (1989, 1991) for Scandinavian languages, Grosu (1988) for Rumanian.

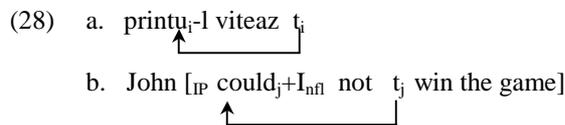
Our interest here is in how these languages react when the complement of D is larger than N^0 . In Rumanian, there are two options; (i) the suffixed article draws the closest head, adjective, instead of N in (26a). (ii) The head N raises to D position stepping over adjective in (26b). The contrast in (26bc) appears to show that the phenomenon involves head-raising not affix-hopping in Chomsky (1957) or affix-lowering as Bobaljik (1994) proposes. That is, if the affix were the moved element, (26c) not (26b) would be an option. Here, the suffixed article is an “attractor”.

- (26) a. viteazu-l print
 brave-the prince
 ‘the brave prince’
 b. printu-l viteaz
 prince-the brave
 ‘the brave prince’
 c. *viteazu printu-l (Rumanian)

The option in (26a) is a typical example of Chomsky’s (1995) Attract: looking down to its c-command path and attracting the closest corresponding element.

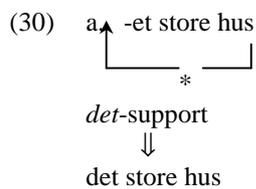


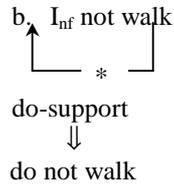
(26b) seems to correspond with AUX raising in English. In both case, the moved element steps over an intervening element (adjective or negative item).



Danish does not allow long distance N-to-D raising or the attraction of the closer element other than N. Instead, this language uses *det*-support to avoid a stranded morpheme just like *do*-support in English. (cf. Delsing 1993)

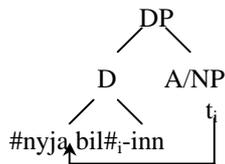
- (29) det store hus
 the big house
 ‘the big house’ (Danish)





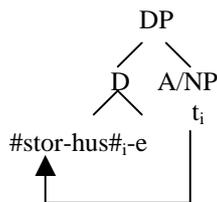
In both Icelandic and Northern Swedish, the whole phrase, A/NP is attracted and adjoined to the D head, when the complement of D is larger than N⁰. Here, we observe additional examples of the adjunction of non-head to a head.

- (31) nyja bil-inn
 new car-the
 'the new car' (Icelandic)



Especially, Northern Swedish makes the attracted phrase compounded. This is what Uriagereka's (1999) Multiple Spell Out conjunctures; 'the phrase maker that has undergone Spell-Out is like a giant lexical compound.' (Uriagereka 1999:256).

- (32) stor-hus-e
 big-house-the
 'the big house' (Northern Swedish)



Finally, in Swedish, the raising of the whole phrase, A/NP to the head D position does happen. However, at the same time, a word like the article, *det* 'the', must be also inserted to the pre-nominal position. I leave it open why (and where) this article must be inserted.⁹

⁹ An anonymous reviewer points out that a suffixed postposition is spread to both the adjective and the noun when Finnish NPs, which are in the complement of PP are modified by an adjective.

Punuaise-lla tua-lla
 This might be related to the double occurrence of determiner that Swedish DPs show

- (33) det stora hus-et
 the big house-the
 'the big house' (Swedish)

det #stora hus#_i-et t_i

8. Summary

What I have proposed in this paper is that even when the derivation operates the head adjunction (or the head movement), some heads can attract a maximal projection, and Uriagereka's (1999) Multiple Spell Out can be exploited in these cases. I have shown that this innovation can attribute the formation of the postpositions of Japanese and Finnish to their properties as suffixes, defending LCA without AGRP and any special status of the Spec-head relations. Specially, Finnish data may be problematic for the Head parameter-approach, while fairly supporting my proposal.

To sum up, given what we have seen so far, even within the current framework proposed by Chomsky (1998), syntax can be antisymmetric in Kayne's (1994) sense. And I do hope that my work here would shed some light on remaining mysteries of the word order formation in languages.

Acknowledgments

I thank Juan Uriagereka, and the participants of his seminar in Spring 1999. Special thanks go to Cedric Boeckx, Juan Carlos Castillo, Max Guimarães, David Lightfoot, and Francisco Ordóñez, as well as an anonymous reviewer. Finally, I owe Tuomo Neuvonen most. Without his information concerning Finnish and other languages, my work here never exist.

References

- Abney, S. (1987). The English noun phrase in its sentential aspect. Diss, MIT, Cambridge, MA.
 Bobaljik, J. (1994). What does adjacency do? *MIT Working Papers in Linguistics* 22, pp. 1-32.
 Carnie, A. (2000). On the definition of X⁰ and XP. *Syntax* 3:2, pp. 59-106.
 Chomsky N. (1957). *Syntactic structure*. Mouton, The Hague.
 Chomsky N. (1994). Bare Phrase Structure. Webelhuth, G. (ed.), *Government and Binding Theory and the Minimalist Program*. Blackwell, Oxford, pp. 383-439.
 Chomsky, N. (1995). *The Minimalist program*. MIT Press, Cambridge, MA.
 Chomsky, N. (1998). Minimalist inquiries: The framework. Martin, R. D. Michaels & J. Uriagereka (eds.), *Step by step*. MIT Press. Cambridge, MA.
 Delsing, L-O. (1988). The Scandinavian noun phrase. *Working Papers in Scandinavian Syntax* 42, pp. 57-79.
 Delsing, L-O. (1989). A DP-analysis of the Scandinavian noun phrase. Ms, University of Lund.
 Delsing, L-O. (1993). *The internal structure of noun phrases in the Scandinavian languages*. University of Lund.
 Grosu, A. (1988). On the distribution of genitive phrases in Rumanian. *Linguistics* 26, pp. 931-949.
 Kayne, R. (1994). *The antisymmetry of syntax*. MIT Press, Cambridge, MA.

- Lasnik, H. (1981). Restricting the theory of transformations: A case study. Hornstein, N. & D. Lightfoot (eds.), *Explanation in linguistics*. Longmans, London, pp. 152-173.
- Lasnik, H. (1999). *Minimalist analysis*. Blackwell, Oxford.
- Nikanne, U. (1993). On assigning semantic cases in Finnish. Holmberg, A. & U. Nikanne (eds.), *Case and other functional categories in Finnish*. Mouton de Gruyter, Berlin, pp. 75-87.
- Taraldsen, K. T. (1989). D-positions in Norwegian. Nespor, M. & J. Mascaró (eds.), *Grammar in progress*. Foris, Dordrecht, pp. 419-431
- Taraldsen, K.T. (1991). Two arguments for functional heads. *Lingua* 84, pp. 85-108.
- Uriagereka, J. (1999). Multiple Spell-Out. Epstein S. D. & N. Hornstein (eds.), *Working minimalism*. MIT Press, Cambridge, MA, pp 251-82.
- Vainikka, A. (1993). The three structural cases in Finnish. Holmberg, A. & U. Nikanne (eds.), *Case and other functional categories in Finnish*. Mouton de Gruyter, Berlin, pp. 129-159.

Replacing expletive pro by verb movement in Romance languages

Karen Lahousse

The subject of this paper is expletive pro as it is alleged to appear in the preverbal subject position of sentences with a realized postverbal subject. My aim is to show that it is impossible to use expletive pro for analyzing Romance inversion structures because an account with expletive pro entails both empirical and conceptual problems. I will propose a radicalized version of the Chomsky (1998) account wherein verb movement replaces expletive pro. This radicalized version of Chomsky (1998) allows to incorporate the Romance data. Independent empirical evidence is offered by the position of the Spanish adverb *siempre*.

1. Introduction

In sentences with a realized postverbal subject as the Italian (1a), the Extended Projection Principle (EPP)¹ is seemingly not satisfied, and the sentence should be ungrammatical, contrary to fact:

- (1) a. Ha mangiato Gianni. (I)
has eaten John
'John has eaten.'

To solve this paradox, traditional generative grammar postulates the appearance of an *expletive pro* (Pro_{expl}) in the preverbal subject position, whose only function is to satisfy strong EPP:

- (1) b. [_{specTP} Pro_{expl} [_{T°} ha mangiato [_{VP} Gianni]]] (I)
has eaten John
'John has eaten.'

¹ Following the EPP, the *Extended Projection Principle*, verbs should always have a subject in the preverbal subject position, the SpecTP position.

However, this notion of expletive *pro* meets serious empirical and conceptual problems and I will argue that expletive *pro* cannot be used to analyse Romance inversion structures. I will propose a radicalized version of the Chomsky (1998) account, wherein the strong EPP-feature of the verb in T is satisfied by movement of the lexical subject to SpecTP (the preverbal subject position). In such an account, there is no need for expletive *pro*, given that strong EPP is satisfied by the lexical subject. The verb-subject order in inversion structures is then obtained by moving the verb out of TP to a higher position in the left periphery.

Independent empirical evidence for this verb movement out of TP will be offered by the position of the Spanish temporal adverb *siempre* ‘always’. This adverb is base-generated on the left of the verb or on the left of the object. Following Cinque (1999), I assume that adverbs move along with the constituent they were attached to in their base-generation position. This means that, if *siempre* is base-generated with the verb, it moves along with the verb. It follows then that *siempre* can be used to indicate the position of the verb; if *siempre* occupies a peripheral position, the verb will also be in the left periphery, out of TP.

2. The impossibility of an account with expletive *pro*

In this section, I will first show the conceptual problems expletive *pro* meets (2.1.). Then, I will show that, of all the conceptually possible models, the only satisfying model is the one with strong EPP, with argumental *pro* and without expletive *pro* (2.2.).

2.1. The inherent problems for expletive *pro*

The notion of expletive *pro* has always been a controversial notion in generative grammar. Many authors have argued that it does not exist and others use it as a *deus ex machina* to explain inversion cases, without considering the status of this element, which is very problematic.²

The postulation of expletive *pro* indeed meets a large number of inherent conceptual problems. First, the presence of expletive *pro* has been postulated only for theory-internal reasons, to satisfy strong EPP, and there is no empirical evidence in favor of the existence of such an element. Second, the existence of this element is a *contradictio in terminis*: expletives are by definition elements needed to fill positions that cannot be empty. Then, how can an expletive be empty itself? Third, the introduction of an empty expletive subject in sentences where there is already a subject that bears the Case, Agreement and thematic properties is largely superfluous. Fourth, its presence entails a not unitary *pro*

² Among others, Alexiadou & Anagnostopoulou (1999), Manzini & Savoia (1997), Piccolo (1998) and Platzack (1998) argue that expletive *pro* does not exist.

phenomenon: if expletive pro exists, the pro phenomenon contains two elements that occupy the same position but that have a totally different function: expletive pro on the one hand, and argumental pro, the empty subject of sentences without realized subject, on the other hand. Fifth, with the presence of expletive pro, sentences with preverbal lexical subject and postverbal lexical subject have a different numeration, an undesirable consequence.³ Sixth, expletive pro does not even explain all the inversion cases. For example, the Italian (2) should be grammatical if expletive pro were present, contrary to fact:

- (2) *Pro_{expl} sembra partire Gianni in anticipo (I)
 seems to leave John earlier
 ‘John seems to leave earlier.’

2.2. Empty elements and the EPP: eight conceptual possibilities

The presence of empty elements, such as argumental and expletive pro, relies mainly on the EPP: the existence of expletive pro depends uniquely on the EPP, and argumental pro is derived from a combination of the Projection Principle, the EPP and the Theta criterion. Varying the number of empty elements in the model (there can be no pro, only argumental pro, only expletive pro or both expletive and argumental pro), and varying the nature of EPP (it can be weak or strong), there are eight conceptual possibilities:

	No pro	Pro arg	Pro expl	Pro arg + pro expl
Strong EPP	Alexiadou & Anagnostopoulou (1999)	Lahousse (2000)	unconceivable	Chomsky (1998)
Weak EPP	Manzini & Savoia (1997) Picallo (1998)	Platzack (1995)	unconceivable	unconceivable

Three of the eight possibilities are unconceivable. On the one hand, a model with weak EPP and expletive pro is conceptually impossible: given that the only reason for the postulation of expletive pro is to satisfy strong EPP, expletive pro has no reason to exist if EPP is weak. On the other hand, argumental pro must be present in a model with strong EPP because otherwise, sentences without an expressed subject would be ungrammatical (because strong EPP is not satisfied), contrary to fact.

However, in my opinion, not all of the remaining five cases are optimal and equal solutions. First, there are serious reasons to believe that argumental pro

³ The sentences *Juan llega* and *Llega Juan* (‘John arrives.’) would have respectively the following numerations: [*Juan, llega*] and [*expletive pro, Juan, llega*].

exists: on the one hand, argumental *pro* represents the external theta role of the verb and on the other hand, without argumental *pro*, it is impossible to explain the grammaticality of (3), where the anaphor *si* has to be locally bound.

- (3) Si vedono spesso (I)
 REFL3P see often
 ‘They often see each other.’

Second, the possibility that EPP is weak is ruled out: if EPP was weak, expletive *pro* would - by definition - not exist, a desirable consequence, but it would also be impossible to explain verb-subject agreement in inversion cases without feature movement, a mechanism that I reject, along with Chomsky (1998/1999) and many others.⁴ The conclusion is straightforward: EPP must be strong.

So, an ideal model would be the case wherein EPP is strong and wherein there is only place for argumental *pro*. My following step is then to investigate whether the Chomsky (1998) model - which has strong EPP but both expletive and argumental *pro* - can be adapted in such a way as to account for Romance inversion facts.

3. Chomsky (1998)

In Chomsky (1998), the EPP principle is accounted for by a strong D-feature on T. In particular, EPP can be satisfied in three ways: (a) by merge of an expletive, as in *There arrives a man*, (b) by merge of an associate, as in *A man arrives* and (c) by merge of α closer to T than the associate.⁵

This account is problematic for Romance inversion cases. First consider stylistic inversion in French (4a) and free inversion in Trentino (4b), a North Italian dialect:

- (4) a. Quand arrive l'été, il est temps de penser aux vacances (F)
 when arrives the summer, it is time to think on holidays
 ‘When the summer arrives, it is time to think about the holidays.’
 b. Magna el Mario (Safir 1985) (T)
 eats the Mario
 ‘Mario eats.’

⁴ To explain the verb-subject agreement in their model with weak EPP, Manzini & Savoia (1997) and Picallo (1998) have to rely on feature movement, and Platzack (1995) on covert raising of the subject to SpecIP, a mechanism very similar to feature movement. However, in a model with weak EPP and without feature movement, the structure of inversion cases is the following:

[_{SpecTP} [_T verb [_{VP} subject _v]]]. It is not clear, then, how the verb-subject agreement can be accounted for, given that it is generally assumed that verb-subject agreement takes place in TP between the head and the specifier, via the phi-features on T.

⁵ This case occurs in languages like Icelandic, but not in Romance languages. In what follows, we will not take it into account.

These inversion structures do not correspond to the Chomsky (1998) (a) and (b) cases: strong EPP is apparently not satisfied, nor by merge of the associate, nor by insertion of an expletive, which is even prohibited, as you see by the ungrammaticality of (5a) and (5b):

- (5) a. *Quand il arrive l'été,... (F)
 when EXPL arrives the summer
 'When there arrives the summer...'
 b. *El magna el Mario... (T)
 EXPL eats the Mario

Additionally, it seems impossible to maintain the strong nature of EPP in Spanish and Italian free inversion structures where there is apparently no element that satisfies strong EPP.

The paradox is traditionally solved by introducing an expletive pro in these inversion structures:

- (6) [_{specTP} Pro_{expl} [_{T'} verb_{D/phi} [_{VP} subject_{t_{phi}}]]]

Expletive pro checks the strong D-feature on T, while the postverbal lexical subject satisfies the phi-features on the verb.

However, the combination of expletive pro and the Chomsky (1998) EPP mechanism meets serious empirical and conceptual problems in Romance languages. First, like I showed before (2.1.), the notion of expletive pro itself has some serious conceptual problems, and here again, its only function is to satisfy the strong D feature on T. Second, although the presence of expletive pro offers a possible explanation for inversion cases in Italian and Spanish, expletive pro does not account for two characteristics normally associated with expletive-associate constructions (Chomsky 1998:41): T-associate agreement and the definiteness effect. Indeed, on the one hand, the T-associate agreement is not regulated via expletive pro but via the phi-features on T. On the other hand, there is no definiteness effect in Spanish and Italian inversion structures like (1a). Third, in French and Trentino, like in Spanish and Italian, expletive pro does not explain the T-associate agreement nor the lack of definiteness effect in inversion structures.

In what precedes, I have shown that the French, Spanish, Italian and Trentino data cannot be explained with expletive pro, nor can they be explained without expletive pro because strong EPP would not be satisfied. Given that the Chomsky (a) and (b) cases, in combination with expletive pro, do not give a satisfying account of Romance inversion structures, I will try to adapt the model to accommodate the Romance inversion structures.

4. My proposal : a radicalization of Chomsky (1998)

Radicalizing the Chomsky (a) and (b) cases, I state that strong EPP can be satisfied by : (a) insertion of an overt expletive, with the definiteness effect and the agreement of T depending on the type of expletive that is merged (7)⁶ or (b) subject raising to SpecTP, with agreement between T and the subject, and without the definiteness effect:

(7) Il arrive un homme (F)
 EXPL arrives a man
 'There arrives a man.'

(8) a. Jean mange (F)
 b. El Mario el magna (T)
 c. Gianni mangia (I)
 d. Juan come (S)
 John eats
 'John eats.'

This allows to explain all the Romance examples with lexical or expletive preverbal subjects without having recourse to expletive pro.

However, I need an additional element to incorporate inversion structures in this radicalized Chomsky (1998) model. So, the only possibility⁷ is to make use of syntactic ordering: the inverted word order can be explained by assuming an additional verb movement: after the raising of the subject to SpecTP⁸, the verb already raised to T° (see Pollock 1989) makes an additional move to a higher functional projection XP in the CP layer and the inversion structure (9) is obtained:

(9) [_{X°} verb_v [_{SpecTP} subject_s [_{T°} t_v [_{VP} t_s t_v]]

Up till now, I have shown that a model with expletive pro is highly undesirable and that the Romance inversion cases can be explained with a model in which expletive pro has been replaced by verb movement.

⁶ Following Chomsky (1998), there are two types of empty expletives: *it-like* expletives, which agree with the verb, as in the French *Il arrive un homme*, or *there-like* expletives, which let the verb agree with the postverbal lexical subject, as in English *There arrives a man*.

⁷ In 2.2., I already showed that the number of empty elements cannot be modified, nor the value of EPP: EPP has to be strong and only argumental pro can exist. The only possibility that is left to explain the inverted word order is to make use of syntactic ordering, and more particularly of verb movement.

⁸ This is my (b) case: the lexical subject raises to SpecTP in order to satisfy strong EPP when no overt expletive is selected.

5. The Spanish temporal adverb *siempre* indicates verb movement out of TP

The goal of the following sections is to give independent evidence in favor of verb movement out of TP in Spanish inversion structures. I will investigate different types of inversion structures with *siempre*, and I will show that in these constructions, the position of *siempre* does indeed indicate a verb movement out of TP. Then, given that so-called free inversion structures behave in exactly the same way, they also involve a movement of the verb out of TP. This will be the confirmation of my hypothesis that the verb moves out of TP in free inversion cases, and that there is no need to postulate expletive *pro*.

5.1. Basic hypotheses

5.1.1. There is no non-motivated movement

My basic hypothesis is largely intuitive: I assume that every type of movement has to be motivated. So, verbs can only move to the left periphery for wh-reasons, for focus-reasons or for discourse reasons.⁹ Adverbs also move, and when they do, it also has to be motivated. If they do not move independently for focus-reasons or wh-reasons, they have to move, following Cinque (1999), together with another phrase that moves.¹⁰ I will show that the adverb *siempre* moves along with the constituent it is attached to in its base-generation position.

5.2.2. The minimal structure of the Spanish left periphery

Because I am concerned with the movement of the verb to a high position, I should first determine the possible positions in the left periphery of Spanish sentences. I adhere to the vision that CP is a layer that encompasses multiple projections where diverse elements such as topics, focused constituents, wh-phrases end up (cf. Cinque 1990, Rizzi 1997, Poletto 2000). Similarly to what Rizzi (1997) does for Italian, I derive the order in the Spanish periphery on the basis of a number of pairs of related sentences. First, the contrast between (10a) and (10b) shows that topics have to precede *simple wh-phrases*, and the examples (11) show that topics can precede and follow *complex wh-phrases*:¹¹

⁹ It is generally assumed that in cases of 'free' inversion, the verb moves to a higher position in order to focus the subject. Zubizarreta (2000) calls this *prosodically motivated movement*.

¹⁰ Following (Cinque 1999:16-17), an adverb can be questioned itself, as in *How elegantly do you think he was he dressed?*, and can also be focalized, as in *MAI Gianni ti farebbe del male* ('Never (focus movement) G. would hurt you').

¹¹ Following Ordóñez (1998), I distinguish between on the one hand *non complex* or *simple* (my term) wh-phrases, like *cuándo* 'when', *dónde* 'where', *qué* 'what', *quién* 'who', *cómo* 'how') and on the other hand *complex wh-phrases*, like *en qué momento* 'in which moment' and *de qué manera* 'in what way', *por qué* 'why' and *cómo qué* 'how'. Simple wh-phrases, unlike complex wh-phrases, trigger obligatory inversion.

- (10) a. *¿Dónde los bolsos los encontró Juan?
 whereWH the bagsTOP them found John
 b. Los bolsos, ¿dónde los encontró Juan?
 the bagsTOP whereWH them found John
 ‘Where did John find the bags?’
- (11) a. ¿Por qué los ejercicios los hace Juan?
 whyWH the exercisesTOP them makes John
 ‘Why does John make the exercises?’
 b. La carne, ¿por qué la prepara Juan?
 the meatTOP whyWH it prepares John
 ‘Why does John prepare the meat?’

On the basis of these examples, it is possible to establish a preliminary ordering of topics and wh-phrases of the Spanish left periphery as in (12):

- (12) topic < complex wh-phrase < topic < simple wh-phrase

The opposition between sentences as (13a) and (13b) is often alleged as a proof for saying that focalized constituents and simple wh-phrases compete for the same position:

- (13) a. *¿Dónde MANZANAS compró Pedro (y no peras)?
 whereWH apples(FOC) bought Peter (and no pears)
 b. *MANZANAS, ¿dónde compró Pedro (y no peras)?
 APPLES(FOC) whereWH bought Peter (and no pears)
 ‘Where did Peter buy APPLES (and no pears)?’

However, I do not agree with this view. Rather, I think that (13a) is ungrammatical because the wh-criterion is not respected, the focalized constituent intervening between the wh-phrase and the verb.¹² Example (13b), then, is ungrammatical because the focus-criterion is not respected, the wh-phrase intervening between the focalized constituent and the verb. Similarly, the example (14a) is ruled out because the focalized constituent is not adjacent to the verb and the focus-criterion is not respected.¹³

- (14) a. *MANZANAS, ¿por qué compró Pedro?
 APPLES(FOC) whyWH bought Peter

¹² I will not discuss the precise formulation of the wh-criterion and the focus-criterion here, for more details, see Rizzi (1996). I just assume that they at least involve a linear adjacency between respectively the wh-phrase and the verb and the focalized element and the verb. Remark that non-arguments as *siempre* cannot violate the wh-criterion.

¹³ In fact, in order to avoid redundancy in the grammar, if one principle (the wh-criterion or the focus-criterion) suffices to rule out an ungrammatical sentence, there should be no other principle in the grammar (the restriction that only one element can occupy a position) having the same effect.

- b. *Por qué MANZANAS compró Pedro?
 whyWH APPLES(FOC) bought Peter
 ‘Why did Peter buy APPLES?’

In (14b), on the contrary, there is no violation of the wh-criterion, nor of the focus-criterion, and yet, the sentence is ungrammatical.¹⁴ This indicates that complex wh-phrases and foci occupy the same position.

I conclude that the ordering of topics, focused elements, complex and simple wh-phrases in the Spanish left periphery is the following:

- (15) topic < complex wh-phrase + focus < topic < simple wh-phrase

5.2. The possible positions of *siempre*

In this section, I will determine the positions *siempre* can occupy. To do so, I will first determine the basic position(s) of the adverb, i.e. the position(s) where the adverb can be generated. Then, I will determine the derived positions of the adverb, i.e. the positions of the left periphery the adverb can move to.

5.2.1. Initial indication of the base generation positions of *siempre*

Following Zagona (1988), in normal declarative sentences, *siempre* precedes or follows the verb, but does not appear VP-finally. In other words, *siempre* is situated before the verb (16a), or between the verb and its objects (16b), but does not appear in final position (16c) or before the subject (16d):

- (16) a. Juan siempre come una manzana.
 John always eats an apple
 ‘John always eats an apple.’
 b. Juan come siempre una manzana.
 c. *Juan come una manzana siempre.
 d. *Siempre Juan come una manzana.¹⁵

This already indicates that *siempre* can be generated to the left of the verb, or on the right of the verb, but not on the left of the subject or in final position. In what follows, I will base upon a corpus of *El País* journal articles to confirm this hypothesis.¹⁶

¹⁴ Remember that the wh-criterion only counts for simple wh-phrases. *Por qué* is a complex wh-phrase and is not subject to the wh-criterion.

¹⁵ Remark that this sentence is grammatical if *siempre* is focalized. In what follows, I will ignore these cases, given that they are not important for my concern.

¹⁶ I will indicate these examples by *EP*. The corpus counts 300.000 words and collects *El País* journal articles written in 1996, 1998 and 1999. It has been established by P. Goethals for his PhD thesis. I gratefully acknowledge P. Goethals for putting his corpus on my disposal. For more details, cf. Goethals (2000). I want to stress that my concern is not to give a statistical analysis of

5.2.2. Base generation positions of *siempre*¹⁷

Given that in the declarative sentences of the corpus, *siempre* mostly occurs immediately before the verb, as in (17), I conclude that *siempre* can indeed be generated on the left of the verb:

- (17) EP Franco siempre tuvo mucho cuidado, ¿tal vez miedo?
 Franco always had much care maybe fear
 ‘Franco always had much care, maybe fear?’

In the corpus, I found 40 examples with *siempre* in postverbal position. Nine of these examples do not have to be considered, as they concern special cases where *siempre* occurs in a gapping structure, in a fixed expression or in the adjectival locution *N de siempre* (‘N of always’). I summarize the different constructions in the following scheme:

<i>Siempre</i> in final position ¹⁸ (14 cases)	<i>Siempre</i> postverbal but not final (26 cases)
leftward movement of the object (7 cases)	leftward movement of the object (9 cases)
gapping (3 cases)	<i>siempre</i> precedes the lexical object (15 cases)
adjectival locution <i>N de siempre</i> (4 cases)	<i>siempre</i> appears in a fixed expression (2 cases)

In 15 of the remaining 31 cases, *siempre* is followed by the lexical object, like in (18):

- (18) EP Por cierto, el presidente decía siempre que el resultado era
 for sure, the president said always that the result was
 vinculante, en contra de mi criterio que debía ser consultivo
 decisive, contrary to my criterion that (it) should be consultive
 ‘For sure, the president always said that the result was decisive,
 contrary to my criterion that it should be consultative.’

In the other 16 cases, the object has been moved leftwards, whether it concerns the relativization of the object, as in (19), or the topicalization of the object, as

the occurrences of *siempre* in the *El País* corpus. The data will only be used to check my hypotheses.

¹⁷ Because declarative sentences are generally considered as the basis structures, from which movement takes place, I will base myself upon declarative sentences to derive the generation positions of *siempre*.

¹⁸ This is an apparent contradiction of Zagóna’s (1988) hypothesis that *siempre* cannot appear in postverbal position. However, as we will see, in all the cases where *siempre* appears in an apparent VP-final position, the object has been moved, so that we can state that *siempre* is followed by the trace of the object and only seemingly appears in VP-final position.

in (20). This indicates that *siempre* can appear in final position if it is followed by the trace of the object:

- (19) EP Francotuvo en sus manos las decisiones que había tenido siempre.
 Francoheld in his hands the decisions that had had always
 ‘Franco held in his hands the decisions that he had always had.’
- (20) EP Esa manera de pensar la tenía siempre, y la sigue teniendo.
 this way of thinking her had always, and her keeps having
 ‘This way of thinking, he always had her, and he keeps on having her.’

So, we can conclude that *siempre* has two base generation positions: *siempre* can be generated to the left of the verb, and then the structure corresponds to (21), or *siempre* can be generated on the left of the object, and then the structure corresponds to (22a) where *siempre* is followed by the lexical object or to (22b) when *siempre* is followed by the trace of a moved object:¹⁹

- (21) [_{TP} subject [_T siempre [_T verb [_{VP} [_{XP} object]
- (22) a. [_{TP} subject [_T verb [_{VP} [_{XP} siempre [_{XP} object]
- b. [object [_{TP} subject [_T verb [_{VP} [_{XP} siempre [_{XP} t_{object}]

5.2.3. The derived positions of *siempre*

In this section, I will try to find the position *siempre* occupies in the left periphery, and more particularly in the positions of the scheme (15) I already established.

First consider the examples (23a-c). It is clear that *siempre* can co-occur with a focalized element (23a), a topic element (23b) or a complex wh-phrase (23c). This means that *siempre* does not occupy these positions:

- (23) a. MANZANAS siempre comió Juan.
 apples(FOC) always ate John
 ‘John always ate APPLES.’
- b. La carne, siempre la preparó Juan.
 the meat^{TOP} always it prepared John
 ‘The meat, John always prepared it.’

¹⁹ For expository reasons, I will consider the derivations from the moment that the verb reaches TP. On the one hand, this entails a coherent methodology: I also derive the generation position of *siempre* from declarative sentences and it is generally assumed that the position of the verb in declarative sentences is T° (Pollock 1989). On the other hand, it is rather intuitive to assume that *siempre*, a temporal adverb, is generated in the TP projection. Nevertheless, remark that the alternative hypothesis that *siempre* is merged with the verb in VP, and then moves along with the verb to TP, does not have any consequences for my account.

- c. Trabajo duro, pero ¿por qué siempre dicen cosas los profesores?
 (I) work hard but why_{WH} always say things the professors
 ‘I work hard, but why do the professors always say things?’

However, as indicated by the ungrammaticality of (23d), *siempre* can not occur between the simple wh-phrase and the verb in interrogatives:

- (23) d. *¿A quién siempre prestaba el diccionario Juan?
 to whom_{WH} always lent the dictionary John
 ‘To whom did John always lend the dictionary?’

This leads us to the conclusion that *siempre* occupies the same position as simple wh-phrases, and so, the scheme (15) can be adapted as follows:

- (24) topic < complex wh-phrase/focus < topic < simple wh-phrase/**siempre**

Given that it is generally assumed that all these positions correspond to a specific projection, SpecSimplewhP is the derived position of *siempre*²⁰:

- (25) [_{TopicP} [_{ComplexwhP/FocusP} [_{TopicP} [_{SpecSimplewhP} **siempre** [_{Simplewh°} [_{TP} [_{VP}]]]]]]]]

5.3. *Siempre* as indicator of the verb movement

Having determined the base generated positions of *siempre*, i.e. to the left of the verb and to the left of the object, and the derived positions of *siempre*, i.e. SpecSimplewhP, I will show that *siempre* moves to its derived position together with the verb, and, consequently, that *siempre* indicates the position of the verb in the left periphery, i.e. the movement of the verb out of TP.

If non focused *siempre* could move independently to SpecSimplewhP, (26) should be grammatical, but it is not:

- (26) a. *Siempre Juan comió una manzana.
 always John ate an apple
 b. * [_{SpecSimpleWh} **siempre** [_{SimpleWh°} [_{SpecVP} Juan [_{V°} comió [la manzana]]]]]

On the contrary, (27), where *siempre* immediately precedes the verb, is grammatical:

- (27) a. Siempre comió una manzana Juan.
 always ate an apple John
 b. [_{SpecSimpleWh} **siempre** [_{SimpleWh°} comió [una manzana [_{SpecVP} Juan]]]]

²⁰ I will not consider another derived position of *siempre*, SpecFocusP, where the adverb moves if it is focused.

This contrast indicates that *siempre* can only move to its derived position if the verb has also moved to the left periphery. It follows then that the movement of *siempre* to SpecSimplewhP is parasitic on the verb movement to the left periphery. Consequently, the position of *siempre* can be used as an indicator for the position of the verb: if *siempre* is in its derived position in the left periphery, the verb is also in the left periphery, and clearly made a movement out of TP.

5.4. *Siempre* with inversion structures

In all the contexts where there is an attested verb movement to the CP field, *siempre* appears in front of the verb, whether it concerns obligatory inversion, like in (23a), where the object is focalized, or not obligatory inversion, like in topicalization structures (23b), interrogatives with complex wh-phrases (23c) or yes/no questions (28):

- (28) EP ¿Siempre tuvo Ud. detrás a su partido?
 always had you behind your party
 'Did you always have your party behind you?'

This position can not be its base generation position (on the left of the verb, i.e. between the subject and the verb), so *siempre* has to be in SpecSimplewhP.

As you see in the following scheme, all the positions I determined earlier (25) on the basis of independent evidence suffice to analyse all types of inversion structures where *siempre* appears:²¹

²¹ I omit the first topic projection for practical reasons.

	complexwh focus		topic		simplewh siempre		object ²²		TP
	Spec	X°	Spec	X°	Spec	X°	Spec	X°	Spec
(23d)					A quién *siempre	prestaba		el libro	Juan?
(23a)	MANZANAS				siempre	comió			Juan.
(23b)			La carne		siempre	la prepara			Juan.
(23c)	Por qué				siempre	dicen		cosas	los profesores?
(28)					Siempre	tuvo			Usted...

In all these inversion cases, *siempre* is in SimplewhP, in the left periphery, which indicates that the verb also moved out of TP to the left periphery, as is generally assumed.

But now, what about free inversion cases? Recall that I argued that in these cases, expletive *pro* should ideally be replaced by verb movement out of TP. Does *siempre* indicate here too verb movement out of TP? Consider the following free inversion examples:

- (29) a. Cuando el profesor hizo una pregunta, siempre contestó
 when the professor made a question always answered
 Carina y Susana no dijo nada.
 Carina and Susana not said anything
 ‘When the professor asked a question, Carina always answered, and Susana didn’t say anything.’
- b. Incluso cuando trabajo duro, siempre dicen cosas los profesores.
 even when (I) work hard, always say things the professors
 ‘Even when I work hard, the professors always say things.’

It is obvious that in these examples, *siempre* precedes the verb and is in its derived position, SpecSimplewhP. I already concluded that if *siempre* is in this position, the verb is also in the left periphery, i.e. out of TP. So, the verb is out of TP in the free inversion cases. This conclusion, together with the conceptual problems with expletive *pro*, leads us to the conclusion that expletive *pro* can be replaced by verb movement in Spanish.

²² Thanks to Jeroen van Craenenbroeck for pointing out to me that the precise position of the object is a problem for my account. If I assume that the verb is in Simplewh°, a plausible hypothesis, it is clear that the object cannot be in the same position, and I have to postulate another projection for the object. It would also be possible to assume that the object right-adjoins to the X° position of the verb or left-adjoins to TP (however, this seems contra-intuitive). I will not go into the details of this discussion, because my main goal is to show that the verb leaves TP in free inversion cases, and the position of *siempre* clearly indicates this.

6. Conclusion

In this paper, I showed that there is strong empirical and conceptual evidence against the existence of expletive *pro*, and that an ideal model should be characterized by strong EPP and only argumental *pro*. In addition, I showed that the framework of Chomsky (1998), with strong EPP and both expletive and argumental *pro*, cannot account for inversion structures in French, Trentino, Spanish and Italian. My alternative hypothesis, then, is a radicalization of Chomsky (1998), wherein strong EPP can only be satisfied by merge of an overt expletive or by raising of the lexical subject to SpecTP, and wherein expletive *pro* is replaced by verb movement out of TP. Independent empirical evidence for this hypothesis has been offered by the position of the Spanish temporal adverb *siempre*. Indeed, given that *siempre* cannot occupy its derived position in the left periphery without the verb also being there, I argued that the movement of *siempre* to the left periphery is parasitic on that of the verb and that, consequently, *siempre* can be used as an indicator of the position of the verb in the left periphery, i.e. out of TP. Then, I showed that in free inversion cases, like in other kinds of inversion structures, the position of *siempre* indeed indicates a movement of the verb out of TP.

In my account, the free inversion structures with *siempre* have been derived in the following way: the subject is merged in SpecVP, the verb is merged in V° and then moves to T° (Pollock 1989) (30a). After this, *siempre* is merged to the left of the verb (30b). Then, the subject moves to the SpecTP position in order to satisfy strong EPP (30c). Finally, the verb moves to the left periphery and *siempre* moves along with the verb to the SpecSimplewhP position (30d):

- (30) a. [_{SpecTP} [_T verb [_{VP} subject t_v]]]
 b. [_{SpecTP} [_T *siempre* [_T verb [_{VP} subject t_v]]]]
 c. [_{SpecTP} subject_s [_T *siempre* [_T verb [_{VP} t_s t_v]]]]
 d. [_{SpecSimplewhP} *siempre* [_{Simplewh°} verb_v [_{SpecTP} subject_s [_T t_v [_{VP} t_s t_v]]]]

I conclude that expletive *pro* is an epiphenomenon of verb movement to the left periphery.

Acknowledgements

I wholeheartedly thank D. Vermandere, B. Lamiroy and A. Zribi-Hertz for extensive discussion and/or comments. Thanks to the audience of the Console9 conference in Lund (December 2000) for useful comments and observations.

References

- Alexiadou, A. & Anagnostopoulou, E. (1999). EPP Without Spec,IP. Adger, D., S. Pintzuk, B. Plunkett & G. Tsoulas (eds.), *Specifiers. Minimalist approaches*. Oxford University Press, Oxford.
- Bosque, I. & Demonte, V. (eds.) (2000). *Gramática descriptiva de la lengua española*. Espasa, Madrid.
- Chomsky, N. (1995). *The minimalist program*. MIT Press, Cambridge, MA.
- Chomsky, N. (1998). Minimalist inquiries: The framework. *MIT Occasional Papers in Linguistics 15*. MIT Press, Cambridge, MA.
- Chomsky, N. (1999). *Derivation by phase*. MIT Press, Cambridge, MA.
- Cinque, G. (1999). *Adverbs and functional heads. A cross-linguistic perspective*. Oxford University Press, Oxford.
- Goethals, P. (2000). Las conjunciones causales explicativas en castellano. Un estudio semiótico-lingüístico. Diss, Katholieke Universiteit Leuven.
- Lema, E. & Treviño, J. (1998). *Theoretical analyses on romance languages: Selected papers from the 26th Linguistic Symposium on Romance Languages (LSRL XXVI)*. John Benjamins, Amsterdam.
- Manzini, M.R. & Savoia, L.M. (1997). Null subjects without pro. *UCL Working Papers in Linguistics 9*.
- Ordóñez, F. (1998). The inversion construction in interrogatives in Spanish and Catalan. Lema, E. & J. Treviño (eds.), *Theoretical analyses on romance languages: Selected papers from the 26th Linguistic Symposium on Romance Languages (LSRL XXVI)*. John Benjamins, Amsterdam.
- Picallo, M.C. (1998). On the Extended Projection Principle and null expletive subjects. *Probus 10*, pp. 219-241.
- Platzack, C. (1995). Null subjects, weak Agr and syntactic differences in Scandinavian. *Working Papers in Scandinavian Syntax 53*, pp. 85-106.
- Poletto, C. (2000). *The higher functional field. Evidence from Northern Italian dialects*. Oxford University Press, Oxford.
- Pollock, J.Y. (1989). Verb movement, Universal Grammar and the structure of IP. *Linguist Inquiry 20*, pp. 365-424.
- Rizzi, L. (1996). Residual verb second and the wh-criterion. Belletti, A. & L. Rizzi (eds.), *Parameters and functional heads. Essays in comparative syntax*. Oxford University Press, Oxford.
- Rizzi, L. (1997). The Fine Structure of the Left Periphery. Haegeman, L. (ed.), *Elements of grammar. Handbook of generative syntax*. Kluwer, Dordrecht.
- Safir, K. (1985). *Syntactic chains*. Cambridge University Press, Cambridge.
- Suñer, T. (1994). V-movement and the licensing of argumental wh-phrases in Spanish. *Natural Language and Linguistic Theory 12*, pp. 335-372.
- Torrego, E. (1984). On inversion in Spanish and some of its effects. *Linguistic Inquiry 15:1*, pp. 103-129.
- Zagona, K. (1988). *Verb phrase syntax. A parametric study of English and Spanish*. Kluwer, Dordrecht.
- Zubizarreta, M.L. (1998). *Prosody, focus, and word order*. MIT Press, Cambridge, MA.
- Zubizarreta, M.L. (2000). Las funciones informativas: Tema y foco. Bosque, I. & V. Demonte (eds.), *Gramática descriptiva de la lengua española*. Espasa, Madrid.

Past Participles in reduced relatives

Tatjana Marvin

This paper discusses the syntax and semantics of Active Past Participles in restrictive reduced relatives (RRs). First, the distribution of Active Past Participles is compared with respect to verb classes in Bulgarian, English, Italian, Slovenian and Spanish. We see that presumably the same surface participial structure has different distributional properties in these languages: in Bulgarian, Past Participles of all classes of verbs appear in RRs, while in other languages only those of unaccusative verbs do so. Second, the differences in the distribution are accounted for by referring to the syntactic structure of the participle and semantic features on participial heads.

1. The data

Let us first compare English and Bulgarian Past Participles in RRs (1-2).^{1,2}

(1) English

- | | |
|--|--|
| a. The book bought by John is red. | <u>Passive Past Participle</u> |
| b. The leaf fallen from the tree is red. | <u>Active Past Participle-unaccusative</u> |
| c. *The man bought the book is John. | <u>Active Past Participle-transitive</u> |

In English, RRs with the Past Participle are available only with participles of passive or unaccusative verbs (1a,b), but not transitive active verbs (1c). Bulgarian, on the other hand, shows no such restriction – Past Participles of all

¹ English, Spanish and Italian have only one Past Participle form, used in the Passive Voice (*The house was bought by John*) as well as in the Perfect Tense (*John has bought the house*). Slovenian and Bulgarian, on the other hand, have two morphologically distinct counterpart forms: the Past Participle (ending in *-l*), which is always active and used in the Perfect, and the Passive Participle (ending in *-en/t*), which is used to form the Passive Voice. This paper focuses on the distribution of Bulgarian/Slovenian Past Participle in RRs and the active variant of English Past Participle in RRs. I refer to these forms with the term 'Active Past Participle'.

² The question which participles appear in reduced relatives has been discussed by many authors, among them Williams (1975), Pesetsky (1995), Embick (1997), Iatridou, Anagnostopoulou & Izvorski (2000).

classes of active verbs (unaccusative, transitive) as well as the Passive Participle are available in RRs, as in (2).

(2) **Bulgarian**, Iatridou, Anagnostopoulou & Izvorski (2000), (IAI henceforth)

- a. vratata otvorena ot vjatura... Passive Participle
 door-the opened by wind-the
 'The door opened by the wind...'
- b. Ženata došla navreme... Past Ptc.-unaccusative
 woman-the arrived on-time
 'The woman who has arrived on time...'
- c. Zaposnah se sas žena-ta napisala knjigata. Past Participle-transitive
 met-REFL with woman-the written-PF book-the
 'I met the woman who has written the book.'

If we look at Past Participles in RRs in some other languages, for example, Slovenian and Italian, we notice that they pattern with English rather than Bulgarian. In Italian, the Past Participle appears in RRs with passive and unaccusative, but not transitive verbs, as seen in (3).

(3) **Italian**, IAI (2000)

- a. un panino mangiato da Gianni... Passive Past Participle
 a sandwich eaten by John
 'A sandwich eaten by John...'
- b. il treno arrivato entro le 3... Active Past Ptc.-unaccusative
 the train arrived by 3
 'The train which had arrived by 3 ...'
- c. *una donna mangiata/o un panino... Active Past Ptc.-transitive
 a woman eaten a sandwich
 'The woman that ate the sandwich...'

Slovenian and Bulgarian, both Slavic languages, have the same surface forms for Past (-l) and Passive (-en/i) Participles. However, Slovenian patterns with English and Italian in allowing only the Passive Participle and the Past Participle of perfective unaccusative verbs in RRs, as seen in (4).

(4) **Slovenian**

- a. Juha, skuhana včeraj, je v hladilniku. Passive Participle
 soup cook-PASS.PRT. yesterday is in fridge
 'The soup made yesterday is in the fridge.'
- b. Videl sem žensko, prispelo danes zjutraj. Past Part-unaccusative
 seen am woman-ACC arrived today morning
 'I saw a woman who arrived this morning.'
- c. *Videl sem žensko, napisalo knjigo. Past Participle-transitive
 seen am woman-ACC written book
 'I saw the woman that wrote the book.'

Abstracting away from the Passive Participle, a summary of the data is given in Table 1.

Table 1: Active Past Participles

	transitive ν	unaccusative ν
English	no	yes
Bulgarian	yes	yes
Italian	no	yes
Slovenian	no	yes

1.2. The questions

The questions that this paper addresses with respect to the distribution of Active Past Participles in RRs are the following:

1. What is the role of unaccusativity in the distribution of the Active Past Participle in RRs in these languages?
2. Do English, Italian and Slovenian form a homogenous group with respect to Active Past Participles in RRs?

This paper will argue for the following answers.

1. Unaccusativity is only superficially the determining factor – the distribution of Active Past Participles in RRs has to do with their syntactic structure and semantics.
2. English, Italian, Slovenian do not form a homogenous group with respect to Active Past Participles in RRs, their participles crucially differing in syntactic structure and semantics. They fall in two groups: Slovenian and Italian versus English.

2. Previous accounts: Iatridou, Anagnostopoulou & Izvorski (2000)

Iatridou, Anagnostopoulou & Izvorski (2000) propose the generalization in (5) as following from the fact that the ability to form a RR containing a Perfect (and therefore the Past Participle) correlates with the type of auxiliary. That, according to them, holds throughout Indo-European languages.

- (5) a. A Reduced Relative can contain a Perfect if the missing auxiliary is *be*.
 b. A Reduced Relative cannot contain a Perfect if the missing auxiliary is *have*.

Let us assume that the generalization in (5) can be applied to the data in (1-4). Then we notice the following. Bulgarian is well behaved with respect to (5); with BE as its only auxiliary, the Past Participle of all classes of verbs are acceptable in RRs, Cf. (2). Italian, an auxiliary-selection language, is also well

behaved. RRs containing Perfect Participles are possible in the BE-Perfect (unaccusatives), but not in the HAVE-Perfect (transitives, unergatives). The generalization doesn't say anything about Slovenian, a BE-only language, i.e. it is not clear why BE can be omitted only with unaccusative verbs and why Slovenian should differ from Bulgarian. Spanish and English are exceptions to the generalization in (5). As HAVE-only languages, they are not expected to allow RRs with the participle appearing in the Perfect. However, as noted by IAI (2000), Spanish allows for RRs with some unaccusative verbs when these are premodified by adverbs, such as *recently*, *lately*, *just*, etc. The same is true of English.³

- (6) Las chicas recién llegadas a la estación son mis hermanas.
 the girls recently arrived at the station are my sisters. IAI (2000)
- (7) The leaf fallen from the tree is red.

2.1. Why is the generalization in (5) insufficient?

There are several reasons why the generalization in (5) cannot be the end of the story about Past Participles in RRs. First, if correct, the generalization in (5) does not account for the existence of languages such as Slovenian, which like Bulgarian, use BE as the only auxiliary in the Perfect, but have RRs only with unaccusative (and passive) verbs, thus patterning with English/Spanish, and with auxiliary selecting languages, but not with Bulgarian.

Second, the above analysis crucially relies on the assumption that the Past Participles in question express the Present Perfect Tense. What I will try to show is that this assumption is wrong and that the data in (1-4) can be viewed as resulting from the syntactic structure and the semantics of the participial heads. Therefore they may, but need not be linked to the auxiliary selection in the formation of the Perfect.

3. The outline of the proposal

3.1. Step 1: Bulgarian versus English/Italian/Slovenian/Spanish

In Step 1, I will show that Bulgarian crucially differs from the other four languages in the fact that the Past Participle in its RRs is a true Perfect Participle, while this is not the case in English, Italian, Slovenian and Spanish, where these participles are aspectual phrases, as in Embick (2000a); Table 2.

³ Building on Kayne (1993), IAI offer an account for this problem. Since in the proposal I will make in this paper the facts in (6-7) are not a problem, I will not present the details of their analysis.

Table 2: Active Past Participles in RRs

Bulgarian	English, Italian, Slovenian, Spanish
<pre> graph TD PerfP --> Perf PerfP --> vP Perf --> features vP --> v vP --> VP </pre>	<pre> graph TD AspP --> Asp AspP --> vP Asp --> features vP --> v vP --> VP </pre>

3.2. Step 2: English/Spanish versus Italian/Slovenian

Differences in the height of attachment of the aspectual morpheme, Kratzer (1993), Marantz (2000), Embick (2000a), result into two different structures that Past Participles in RRs can have. In English and Spanish the Asp head is attached to the root, while in Slovenian and Italian it is attached above vP.

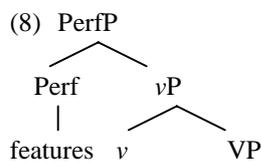
Table 3: Active Past Participles in RRs

Structure 1: English/Spanish	Structure 2: Italian/Slovenian
<pre> graph TD AspP --> Asp AspP --> VP Asp --> features </pre>	<pre> graph TD AspP --> Asp AspP --> vP Asp --> features vP --> v vP --> VP </pre>

4. Step 1: Bulgarian versus the rest

4.1. Bulgarian Past Participles in reduced relatives

In this section I will argue that Bulgarian crucially differs from other languages discussed in that its Past Participle in RRs is a true Perfect Participle, conveying a Present Perfect meaning. I propose that Past Participles in Bulgarian RRs have the structure in (8).⁴



The Perf head is the head realized by past participial morphology that has the features relating the eventuality as a whole to the temporal domain of the Perfect Tense.⁵ Without committing to any of the specific proposals about the

⁴ In this paper I do not consider the aspectual phrases realized by perfective prefixes, perfective suffixes and imperfective suffixes (Secondary Imperfectivization).

⁵ See Giorgi & Pianesi (1997), Ippolito (1997), IAI (2000) for a possible content of the Perf.

content of the Perf at this point, I will claim that whatever features there are on the PerfP participle in a full Present Perfect clause, the same features are found in the reduced relative PerfP participle in Bulgarian. Another property of the Perf head is that it does not select for any particular type of *v*, neither in a full clause nor in a reduced relative clause. The consequence is that if the PerfP participle appears in RRs, it will be possible with all classes of verbs, as is indeed the case in Bulgarian.

Let me now present the relevant data that supports the above proposal. In Bulgarian, all aspects of the Perfect meaning that are available in full clauses are also available in RRs, as shown in IAI (2000). Consider (9) and (10). In (9a) and (10a), the Past Participle is found in full sentences, which have the Existential Present Perfect (ExPP) meaning and the Universal Present Perfect (UPP) meaning, respectively. In (9b) and (10b), the Past Participles appear in RRs, retaining the meaning of the respective full clauses.

- (9) a. *Ženata e pročela knjigata.* ExPP – full clause
 woman-the is read-PTC.PF book-the
 ‘The woman has read the book.’
- b. *Ženata pročela knjigata...* ExPP in a RR
 woman-the read-PTC.PF book-the
 ‘The woman who has read the book...’ IAI (2000)
- (10) a. *Ženata e celuvala Ivan ot sutrinta nasam.* UPP–full clause
 woman-the is kiss-PTC.IMP Ivan from
 morning-the till-now
 ‘The woman has been kissing Ivan since this morning.’
- b. *Ženata celuvala Ivan ot sutrinta nasam...* UPP in a RR
 woman-the kiss-PTC.IMP Ivan from
 morning-the till-now
 ‘The woman who has been kissing Ivan since this morning...’
 IAI (2000)

Also, as shown in IAI (2000), in Bulgarian RRs the same restrictions apply to the Universal Perfect as in full clauses - it can only be found with verbs of imperfective aspect, as seen in (11).

- (11) a. *Ženata čela knjigata ot sutrinta nasam...*
 woman-the read-PTC.IMP book-the from morning till-now
 ‘The woman who has been reading the book since this morning ...’
- b. **Ženata pročela knjigata ot sutrinta nasam...*
 woman-the read-PTC.PF book-the from morning till-now
 ‘The woman who has read the book since this morning ...’ IAI (2000)

Based on the data above and IAI's (2000) analysis, I conclude that the Past Participle in Bulgarian is a Perf phrase in full clauses as well as in RRs.

4.2. Bulgarian versus Slovenian/Italian

In this section I will provide the data that show that Slovenian/Italian Active Past Participles in RRs are not Perfect Participles. But first, some words on the semantics of the Present Perfect in full clauses. The Present Perfect in Slovenian/Italian full clauses is vague in its meaning; it can either express the temporal meaning of the Present Perfect (modification with adverbs such as *now*, *finally*) or the temporal meaning of the Past Tense (modification with adverbs such as *yesterday*). This property of the Present Perfect is shown in examples (12, 13).

- (12) a. Zdaj/Končno sem pojedel dovolj. Present Perfect reading
 Now/Finally am eaten-PF enough
 'Now/Finally I have eaten enough.'
- b. Včeraj sem pojedel dovolj. Past Tense reading
 yesterday am eaten-PF enough
 'Yesterday I ate enough.'
- (13) a. Adesso/Finalmente ho mangiato abbastanza. Present Perfect reading
 'Now/Finally I have eaten enough.'
- b. Ieri ho mangiato abbastanza. Past Tense reading
 'Yesterday I ate enough.' Giorgi & Pianesi (1997)

In RRs, where the same surface form of the participle is used, however, only the Past Tense reading of the Past Participle is possible. The examples in (14a, 15a) with Present Perfect adverbials, such as *finally* or *now*, are ungrammatical; RRs with Past Tense adverbials, such as *yesterday*, are grammatical, (14b, 15b).

(14) Slovenian

- a. *Vlak, zdaj prispel na postajo, je Mimara. Pres. Perf. reading
 train now arrived-PF at station, is Mimara
 'The train that has now arrived at the station is (called) Mimara.'
- b. Vlak, prispel na postajo včeraj Past Tense reading
 train arrived-PF at station yesterday
 ob petih, je Mimara.
 at five, is Mimara
 'The train that arrived at the station yesterday at five is Mimara.'

(15) Italian

- a. *Il treno finalmente arrivato a Milano... Present Perfect reading
 'The train finally arrived at Milano....'

- b. Il treno arrivato alle cinque. Past Tense reading
'The train arrived at five....'

From these data I conclude that the Active Past Participles in Slovenian and Italian reduced relatives do not express the meaning of the Present Perfect and are therefore not Perfect Participles.

4.3. Bulgarian versus English/Spanish

In this section I present the data showing that English and Spanish Active Past Participles are not Perfect Participles. The main argument is the fact that these participles do not express events in the first place. First, if they were eventive, then the event could be potentially modified by adverbs. However, English and Spanish Active Past Participles in RRs cannot be modified by an adverbial referring either to the manner or the time of the event, as shown in (16, 17).

(16) English

- a. *The leaf fallen from the tree at five o'clock/since last Sunday is red.
b. *The leaf slowly fallen from the tree is red.

(17) Spanish

*Las chicas llegadas a las cuatro/rápido
the girls arrived at four/quickly

Another argument for saying that post-nominal participles do not imply an event is found in (18), Embick (1997).

- (18) a. The leaf [fallen from the tree] when we arrived.
b. The man [arrested by the police] when we arrived.

The RR in (18a) cannot be interpreted in the way where the event in the temporal clause *arriving* follows the event in the participle *falling* as the passive RR in (18b) can. The participle in (18a) can only express the state in which the leaves were at the time of our arrival.

5. Step 2: English/Spanish versus Slovenian/Italian

In Section 4 (Step 1) we saw that Bulgarian crucially differs from English, Italian, Slovenian and Spanish in the fact that its Past Participles in RRs have a true Present Perfect reading. A natural question arises: If Active Past Participles in RRs in English/Italian/Slovenian/Spanish are not Perfect Participles, what are they? In the section that follows I will provide an answer to this question. First, I will present the background assumptions that I make and second, I will propose the structures for Active Past Participles in RRs in

English/Italian/Slovenian/Spanish, showing that English patterns with Spanish, while Italian patterns with Slovenian.

5.1. The background

5.1.1. Theoretical assumptions about the little *v*

The verbal functional head *v* (Kratzer (1993), Chomsky (1995) and related work) has the following properties:

- a. features relevant to licensing and semantic interpretation of the external arguments (Kratzer 1993), abbreviated as AG, *ext*
- b. case features for the object, abbreviated as *acc*
- c. verbalizes roots
- d. introduces eventive semantics

5.1.2. Height of attachment

This section of the paper presents the idea that the two readings in (19) can be derived by positing a different attachment site of the passive affix, Kratzer (1994), Marantz (2000), Embick (2000a).⁶

- (19) The door was closed.
- a. Eventive reading: Someone closed the door.
 - b. Stative (adjectival): The door was closed.

If the passive morphology is attached to the verb root, we get the stative reading, with no prior event implied, as in (19b). If the affix is attached above the little *v*, the reading we get is eventive, as in (19a).

While Marantz refers to passive morphology with the term stative/eventive affix, Embick (2000a) proposes that the passive morphology realizes the functional head ASP. Also, he shows that the height of attachment is not enough to capture all the desired readings and that selection between the ASP head and the *v* head is required as well.^{7,8} Applying the height idea he distinguishes the two different structures as in Table 4, which will be adopted in this paper.

⁶ This work is based on the original intuition that height of attachment of functional head determines syntactico-semantic properties by Abney (1987).

⁷ Embick (2000) and Kratzer (1993) distinguish the third reading, the Stative Eventive. In this reading, the ASP selects for a non-agentive little *v*.

(i) The door was closed.

Stative Eventive: the door was in the state of being closed after a closing event.

⁸ Arguments for selectional relationship between Asp and *v* in English and Latin are found in Embick (2000a) and (Embick 2000b).

Table 4: Stative and Eventive Passive Participle, Embick (2000a)

Structure 1: Asp directly to the root	Structure 2: Asp above little v
<pre> graph TD ASP1[ASP] --- ASP2[ASP] ASP1 --- V1[V] ASP2 --- ASP3[ASP] ASP2 --- V2[V] ASP3 --- Stative[Stative] ASP3 --- V3[V] </pre>	<pre> graph TD ASP1[ASP] --- ASP2[ASP] ASP1 --- v1[v] ASP2 --- Perf[Perf(ective)] ASP2 --- v2[v] v2 --- v3[v] v2 --- V1[V] v3 --- AG[AG] v3 --- V2[V] </pre> <p>Selection: Asp [perf] requires v[AG]</p>
Features on Aspect	Features on v
[Stat]: Simple state: no implication of prior event	Stative: No v is present, hence no event
[Perf]: Completive aspect: perfective	Eventive Passive: v (-ext, -acc) is present with AG

5.2. Active Past Participles in RRs: English/Spanish, Italian/ Slovenian

The framework presented above will be used in this section to examine the properties of Active Past Participles in English, Italian, Slovenian and Spanish and account for the differences in their distribution (cf. Section 1.).

5.2.1. English/Spanish Active Past Participles in RRs

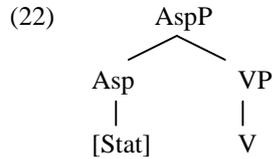
Following Marantz (2000) and Embick (2000a), I will argue that unaccusative Past Participles in English and Spanish RRs, repeated in (20) and (21), are instances of AspP participles where the Asp head with the feature [Stative] is attached directly to the verb root. Their structure is as in (22).

(20) English

The leaves fallen from the tree are all red.

(21) Spanish

Las chicas [recién llegadas a la estación] son mis hermanas.
 the girls [recently arrived at the station] are my sisters. IAI (2000)



We already saw in Section (4.3.) that these participles do not express an event; since they cannot be modified by adverbs referring to the manner or time of the event, see examples (16-18). Moreover, these participles express states as part of their meaning. In (20), *the leaf fallen from the tree* does not have the same meaning as *the leaf that has fallen off the tree*. Rather, it means that the leaf is in the state of ‘being fallen’, i.e. is lying on the ground. Of course, we know from our extra-linguistic knowledge that a falling event must have occurred prior to the leaf reaching its target state, but that event is not expressed linguistically.

Also some restrictions referring to the state can be observed: the state expressed by the Past Participle in RR has to hold at the topic time in the sense of Klein (1994). The sentence in (23), where the topic time is the time of the utterance, is a contradiction because at the utterance time, the apples are no longer in the state described by the participle in the RR.⁹

(23) a. *The apples fallen from the table are back on the table.

Like English, Spanish also has a restriction on the meaning of the participle in (21). One can only utter a sentence such as (21) if the people or things that the participle refers to are in the state that the participle describes. So, one can talk about *people recently arrived* only if these people show some characteristics of being in the state of having just arrived, for example, if they look very tired or lost. Again, like in English, the state expressed by the Past Participle in Spanish RRs has to hold at the topic time. Consider (24).

(24) a. *Las chicas recién llegadas al hotel se mudaron a una hostería
 the girls recently arrived at hotel se moved to an inn.
 b. Las chicas recién llegadas al hotel bajaron a cenar
 the girls recently arrived to hotel went down to have dinner

The sentence in (24a) is not acceptable, because the main clause predicate (*moved to an inn*) changes the state, i.e. the property of the girls, expressed by the participle in the RR (*arrived at the hotel*). We can, however say (24b),

⁹ Compare (23) to the grammatical (ia), where the Past Participle is a PerfP participle in the Perfect Tense (thus eventive by definition), and (ib), where the Past Participle is an eventive Passive Participle.

(i) a. The apples that have fallen from the table twice are back on the table.
 b. The apples placed on the table this morning are no longer on the table.

because the main clause predicate (*went down to have dinner*) does not change the state/property expressed by the participle in the RR – the girls are still recently arrived to the hotel if they go for dinner, but not if they move to an inn.

5.2.2. Unaccusativity in English and Spanish Past Participles

I proposed that in English and Spanish, Active Past Participles in RRs are instances of a low Asp head with the feature [Stative] attaching to the root. Now, one might say that this Asp has to care about unaccusativity, since eventually all the participles that appear in RRs are presumably unaccusative (*fallen, arrived, risen*, etc.). However, if we look at other instances of the Asp head attaching to the root, we see that the Asp head does not care about whether a verb is unaccusative, which is only expected, since these participles do not have a little *v* at all. Consider the Stative reading of the presumably Passive Past Participle in (19b), repeated here as (25), found also in RRs, as in (26).

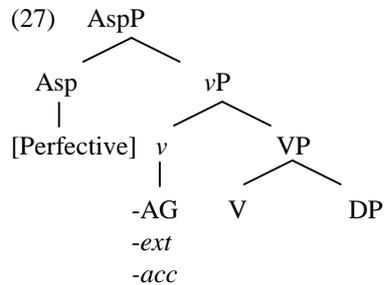
(25) The door was closed.

(26) The door closed because of the cold when we got there...

If we have to define the verb class of *close* in this sentence, we would say it is transitive in the same way as we say that *fallen* in *the apples fallen from the tree* is unaccusative. The point that I am trying to make: The verb class is not important here, since we are attaching the Asp head directly to the verb root and the fact that we think of the participles *fallen* and *closed* on their stative reading as unaccusative and transitive, respectively, is only an illusion.

5.2.3. Slovenian/Italian Active Past Participles in RRs

In this section I will examine Active Past Participles of unaccusative verbs that appear in RRs in Slovenian and Italian. I will claim that this participle is not a Perfect Participle, but an aspectual phrase, where the Asp head attaches above the little *v*, therefore expressing an event, and the feature on the Asp head is [Perfective]. The structure that I propose is essentially the one proposed for English eventive Passive Participle by Embick (2000a) in Table 4 with one difference: The Asp in Slovenian/Italian Active Past Participle selects for a non-agentive little *v*.



What are the arguments for positing the structure in (27)? First, the presence of the little *v* is justified, since unlike in English and Spanish, the Active Past Participles in Slovenian and Italian express an event that can be modified by time or manner adverbial, as shown in (28) and (29).

(28) **Slovenian**

Vlak, prispel ob petih popoldne/s svetlobno hitrostjo...
 train arrived-PF at five afternoon/with light speed
 'The train that arrived at five in the afternoon/very fast...'

(29) **Italian**

Il treno arrivato alle cinque...
 the train arrived at five
 'The train that arrived at five...'

Unlike in English, Active Past Participles in RRs in Slovenian and Italian do not express states. Consider (30) and (31). The Past Participle 'fallen' in (30, 31) does not express a state but rather an event which can be either simultaneous with or immediately follows the event in the *when*-clause.

(30) **Slovenian**

Sneg padel, ko smo prispeli...
 snow fallen-PF when be-1/PL arrived
 'The snow that fell when we arrived...'

(31) **Italian**

Il bambino caduto quando ha suonato il telefono.
 the child fallen when has rang the phone
 'The child that fell when the phone rang...'

Adopting the structure in (27) for Past Participles in RRs in Slovenian with the feature [Perfective] on Asp naturally accounts for another restriction - In Slovenian, the Past Participle that occurs in RRs has to be a participle of a perfective verb, as shown in (32). If the Asp head has the feature [Perfective]

then such behavior is expected: the Asp head will be incompatible with the imperfective aspect.¹⁰

- (32) a. Amanda je videla sneg, padel na polje.
 Amanda is seen snow fallen-PF on field
 ‘Amanda saw the snow that fell on the field.’
 b. *Amanda je videla sneg, padal na polje.
 Amanda is seen snow fallen-IMP on field
 ‘Amanda saw the snow that was falling on the field.’

In Italian, the Active Past Participle is perfective by default; the imperfective form of the Past Participle does not exist.

5.2.4. Unaccusativity in Italian and Slovenian Past Participles

In Italian and Slovenian, where the Asp in the Past Participles in RRs is attached above the *v*P, unaccusativity can be derived from the properties of the Asp head. Namely, the attaching Asp selects for a particular type of *v*, in the formation of the Active Past Participle in RRs as well as in the formation of the Passive Past Participle. Considering both, the active and the passive form, we obtain the following: If Asp with the feature [Perfective] is attached to form an eventive Passive Participle, it will select a passive little *v*, (-acc, -ext, AG), Embick (2000a). If Asp with the feature [Perfective] is attached to form a RR Active Past Participle, it will select an unaccusative little *v* (-acc, -ext, -AG). This relation is expressed in terms of Selection.

(33) Selection in Slovenian/Italian:

Eventive Passive Participle, Eventive Active Past Participle: Asp [Perfective] requires *v* [-ext].

6. Conclusion

In this paper I discussed the distribution of Active Past Participles in restrictive reduced relatives in Bulgarian, English, Italian, Slovenian and Spanish. The paper started with the common observation in the literature that in Bulgarian, Active Past Participles of all classes of verbs appear in RRs, while in English, Italian, Slovenian and Spanish only Active Past Participles of unaccusative verbs are possible in RRs. First, I argued that Past Participles in RRs are not Perfect Participles in all the languages discussed and therefore their availability in RRs is not necessarily linked to auxiliary selection. I proposed that the data

¹⁰ The participles of imperfective verbs exist and are used in the main clauses, as in (i).

- (i) Sneg je padal na polje.
 snow is fallen-IMP on field
 ‘The snow was falling on the field.’

in (1-4) follow from the structure and the semantics of the participles in RRs and not from the type of the auxiliary that the same surface Active Past Participle would take in the Perfect. Second, I argued that if it seemed that unaccusativity had to do with the distribution of Active Past Participles in these languages, then that was either an illusion (English, Spanish) or derivative of the properties of participial heads realized by the participial morphology (Bulgarian, Italian, Slovenian). The structures proposed for Active Past Participles in RRs are summarized in the table below.

Stative: En/Sp	Eventive: Sl/It	Perfect: Bulg
<pre> AspP / \ Asp VP [Stat] no v </pre>	<pre> AspP / \ Asp vP / \ [Perf] v -AG VP -ext -acc Asp selects -AG v </pre>	<pre> PerfP / \ Perf vP / \ v VP </pre> <p>any kind of v</p>

Acknowledgments

I wish to thank especially David Embick, Sabine Iatridou and David Pesetsky for extensive discussions on these materials. Also, I would like to thank Cristina Cuervo, Michela Ippolito, Roumi Izvorski and Marina Todorova for their judgments and useful comments.

References

Abney, S. (1987). *The English noun phrase in its sentential aspect*, Diss, MIT, Cambridge, MA.
 Burzio, L. (1986). *Italian syntax: A Government-Binding approach*. Reidel, Dordrecht.
 Chomsky, N. (1995). *The minimalist program*. MIT Press, Cambridge, MA.
 Embick, D. (1997). *Voice and the interfaces of syntax*. Diss, University of Pennsylvania, Philadelphia.
 Embick, D. (2000a). Features, syntax, and categories in the Latin perfect. *Linguistic Inquiry* 31:2, pp. 185-230.
 Embick, D. (2000b). Participial structures and participial asymmetries. Handout, MIT, Cambridge, MA.
 Giorgi, A & F. Pianesi. (1997). *Tense and aspect*. Oxford University Press, Oxford.
 Iatridou, S., E. Anagnostopoulou & R. Izvorski (1999). Some observations about the form and meaning of the perfect. Ms, MIT, Cambridge, MA.
 Ippolito, M. (1997). Reference time and tense anaphora. Ms, MIT, Cambridge, MA.
 Kayne, R. (1993). Towards a modular theory of auxiliary selection. *Studia Linguistica* 47, pp. 3-31.
 Klein, W. (1994). *Time in language*. Routledge, London.
 Kratzer, A. (1993). The event argument structure and the semantics of voice. Ms, University of Massachusetts, Amherst.
 Levin, B. & M. Rappaport (1995). *Unaccusativity: at the syntax-lexical semantics interface*. MIT Press, Cambridge, MA.

- Marantz, A. (2000). Reconstructing the lexical domain with a single generative engine. Handout, MIT, Cambridge, MA.
- Marvin, T. (2000). Slovenian verbal conjugation. Ms, MIT, Cambridge, MA.
- Orešnik, J. (1994). *Slovenski glagolski vid in univerzalna slovnica*. SAZU, Ljubljana.
- Pesetsky, D. (1995). *Zero syntax*. MIT Press, Cambridge, MA.
- Scatton, E. (1984). *A reference grammar of modern Bulgarian*. Slavica Publishers, Ohio.
- Toporišič, J. (1984). *Slovenska Slovnica*. Založba Obzorja Maribor, Maribor.
- Williams, E. (1975). Small clauses in English. Kimball, J.P. (ed.), *Syntax and semantics, Syntax and Semantics 4*. Academic Press, Hartcourt Brace Jovanovich, New York, pp. 249-273.

Pronominal doubling in Greek: a head-complement relation

Dimitra Papangeli

In this paper I will argue that pronouns may take a DP as their complement in Greek: the two elements start out as a constituent and they are thus jointly assigned the internal theta-role of the verb. The pronoun cannot contain features that clash with those on the double, since the two elements are part of a single extended projection. Moreover, this is allowed only in languages with a rich case paradigm on nouns. A pronoun may also be associated with a phrase in apposition (i.e. adjunct position) through co-reference, established outside the module of syntax.

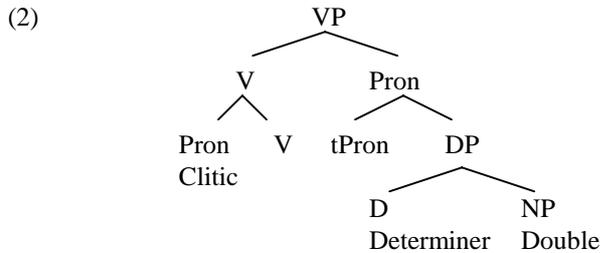
1. Introduction

In the case of clitic doubling two elements, a pronoun and a DP, seem to compete for the same theta-role:

- (1) *Ton idha to Yani hthes.*
CL-3SGM-ACC saw-1SG the-Yani-ACC yesterday
'I saw Yani yesterday.'

In (1) the pronoun *ton* 'him' and the DP *to Yani* '(the) Yani' are potential arguments of the verb. However, the assumption that both receive the same theta-role would lead to the violation of the theta-criterion. Sportiche (1992, 1998), (also Agouraki 1992 and Anagnostopoulou 1994 for Greek) has argued that the pronoun is merged in the (extended) verbal projection and so it is never assigned the internal theta-role of V. He is forced to assume, though, that the verbal complement position is filled by a pro in the absence of a double. As we will see, there is no independent evidence for the presence of object pro in Greek. Uriagereka (1995) and Torrego (1998), on the other hand, have proposed that the pronoun and its double start out as a constituent: the pronoun is a D-head that takes the double as its specifier. It can thus be assumed that the two elements are jointly assigned the internal theta-role of V. I will argue that a pronoun may take a DP as its complement. This is related to theories of object clitics as elements that select for a pro complement (Borer 1984, Jaeggli 1984).

I am proposing that pronouns can select for an overt DP. If the pronoun is a clitic, it then moves and adjoins to the verb:



A pronoun may also be co-referential with a phrase in an adjunct position. In this case though, only the pronoun is assigned a theta-role from V. It can be assumed that the pronoun is associated with its double through co-reference, established outside the module of syntax (Reinhart 1983):

- (3) a. *Lo* vimos *a Juan*. (Spanish)
 CL-3SGM-ACC saw-3PL P Juan
 'We saw Juan.'
- b. *L'* abbiamo vista # *la sorella di Maria*. (Italian)
 CL-3SGF-ACC have-1PL seen-F the-sister of Maria
 'We have seen her, Maria's sister.'
- c. *I Maria # tin* idha na erhete. (Greek)
 the-Maria CL-3SGF-ACC saw-1SG SUBJ come-3SG
 'Maria, I saw her coming.'
- d. *Tu Yani # tu* ipa tin alithia. (Greek)
 the Yani-GEN CL-3SGM-GEN said-I the truth¹
 'Yani, I told him the truth.'

My aim is to argue that a pronoun and its double are related syntactically only when they start out as a constituent (cf. 1). The distinction between doubling in syntax and doubling outside the module of syntax (cf. 3) is necessary to capture the different empirical properties that are attested.

Doubling in syntax should be possible with full pronouns as well. This is borne out in Greek: full pronouns may take a DP as their complement. In this case, no adverbial can intervene between the pronoun and its double. Reduced pronouns must incorporate to the verb, while full pronouns can remain in situ and be adjacent to their double. Moreover, it is possible to extract from the DP-double of a reduced pronoun in Greek, indicating that the DP occupies a complement position, namely it is the complement of the pronoun.

In addition, following Grimshaw's (1991) theory of extended projection, it is predicted that pronouns (functional heads merged in the extended nominal

¹I am using the notion genitive as a cover term for both genitive and what sometimes is called dative. No theoretical implications are intended.

projection) will not contain features that clash with those of the noun-double (the lexical head). This is true in Greek: the pronoun and its double always carry the same features for case, number, gender, person and category, if they form a constituent. The situation is different with nouns taking a DP as their complement: two lexical heads project and so they can carry clashing features.

Lastly, I assume following Neeleman & Weerman (1999) that CASE is a functional head generated on top of every case-marked DP. According to their minimalist model of grammar, a variant of the ECP applies at PF (see also Aoun et al. 1987, Rizzi 1990). If CASE is not spelled out, the CASE-head has to meet the ECP. This is banned, though, in the presence of a pronominal phrase between the CASE P and its dominating VP. This is supported by the data: we cannot extract from the double of a clitic in Spanish, a language without morphological case on nouns.

2. Reduced pronouns above the VP

Sportiche (1992/1998) argues that clitics are functional heads generated in the extended verbal projection (Agouraki 1992, Anagnostopoulou 1994 argue for similar analyses in Greek). A phrase-double (XP*) is merged as the complement of the verb. It is thus assumed that the clitic is never assigned the internal theta-role of V. The clitic is related to its double after movement of the XP* (which is either overt or null) to the specifier of the projection headed by the clitic. There are some problems with this analysis.

Firstly, if movement of the double were always realised in overt syntax, we would expect it to immediately precede the clitic-head. This is not true:

- (4) a. *Tu Yani tu eho milisi.*
 the-Yani-GEN CL-3SG-M-GEN have-1SG talked
 'To Yani, I have talked.'
- b. *Tu Yani dhen tu eho milisi.*
 the-Yani-gen neg cl-3sg-m-gen have-1sg talked
 'To Yani, I haven't talked.'
- c. *Tu Yani poles fores tu eho milisi.*
 the-Yani-GEN many times CL-3SG-M-GEN have-1sg talked
 'To Yani, I have talked to (him) many times.'

Here the double is a topic base-generated in its surface position (Tsimplici 1995 following Cinque 1990 for Clitic Left Dislocation, CLLD).

So, Sportiche is forced to propose a filter, which guarantees that an overt functional head cannot simultaneously appear with an overt specifier, if they encode the same property. However, this is not always true:

- (5) a. *Chtel bych vedet co ze Marie cetta.* (Czech)
 Would-I like to-know what that Mary read

- b. Ik vraag me af *wat of* dat Jan gezien heeft.
 I wonder REFL part what if that John seen has
 (Dutch)
 (Ackema & Neeleman, 1998: 471, 475)

A wh-phrase can be adjacent to one or more C-heads: in (a) *co* ‘what’ is the wh-phrase and *ze* ‘that’ the C-head and *wat* ‘what’ is the wh-phrase and *of* ‘if’ and *dat* ‘that’ the C-heads in (b). This indicates that both the head C and its specifier are filled by elements encoding the same property, even if we allow more than one C. In the same vein, we would expect the Doubly Filled Voice Filter to be violated, contrary to fact.²

Moreover, in the absence of a DP-double, Sportiche is forced to assume a pro in the verbal complement position: the verb needs to assign its internal theta-role to an element that is merged as its complement. However, Greek seems to behave like English in that an understood object is not active in syntax: an empty object cannot act as a controller, it does not qualify as the antecedent of a reflexive, nor is it ever modified by a secondary predicate. These are tests put forth by Rizzi (1986). So, there seems to be no independent evidence for the presence of object pro (although Greek allows for subject pro). Italian allows for a phonologically null DO to act as the controller of a subject that is generated in an embedded clause:

- (6) Questo conduce ---- a [PRO concludere quanto segue].
 *This leads ---- to [PRO conclude what follows]
 (Rizzi 1986:503)

In Greek, on the other hand, a phonologically null DO is not a potential controller of the embedded subject:

- (7) a. *Afto kani ... na katalavun ti akoluthi.
 this makes/leads ... to understand-3PL what follows
 *‘This makes/leads ... to understand what follows.’
 b. Afto kani *tus anthropus* na katalavun ti
 this makes/leads the-people-acc to understand-3PL what
 akoluthi.
 follows
 ‘This makes/leads the people to understand what follows.’
 c. Afto *tus* kani na katalavun ti akoluthi.
 this CL-3PL-ACC makes/leads SUBJ understand-3PL what follows
 ‘This leads them to understand what follows.’

In addition, in Italian, a phonologically empty object is a potential antecedent for a reflexive:

²A possible rendition of the theory would be that clitics are related to their double through the operation *Agree*. However, it is hard to understand why this operation should only be realised covertly.

- (8) La buona musicariconcilia ---- con se stessi.
 'Good music reconciles ---- with one self.'
 (Rizzi 1986:504)

In Greek, the reflexive is bound only by a phonologically realised object:

- (9) a. *I kali musiki simfilioni --- me toneafto tus.
 the-good music reconciles --- with the-self- cl-3pl-m-gen
 *'Good music reconciles --- with themselves.'
 b. I kali musiki simfilioni *tus anthropus* me
 the-good-music reconciles the-people-ACC with
 toneafto *tus*.
 the-self- CL-3PL-M- GEN
 'Good music reconciles people with themselves.'
 c. I kali musiki *tus* simfilioni me toneafto *tus*.
 the-good-music CL-3PL-ACC reconciles with the-self-CL-3PL-GEN
 'Good music reconciles them with themselves.'

In addition, a phonologically null object can be the subject of a secondary predicate in Italian:

- (10) Questa musica rende [.... *alegrì*].
 this music renders happy ([+pl])
 (Rizzi 1986:505-507)

The situation is different in Greek. The object, which is modified by the secondary predicate, must be phonologically realised:

- (11) a. Afti i musiki kani *tus anthropus* eftihismenus.
 this- the-music makes the-people-ACC happy-PL-M-ACC
 'This music renders/makes people happy.'
 b. *Afti i musiki kani ... eftihismenus.
 this-the-music makes ... happy-PL-M-ACC
 *'This music renders/makes ... happy.'

A possible assumption would be that the clitic-head licenses and identifies pro in Greek. In other words, object clitics and subject agreement play the same role as far as pro licensing is concerned (Roussou p.c.). However, such a hypothesis would be unfalsifiable. In addition, agreement is not required in Italian for the presence of the object pro (as illustrated by Rizzi's examples above). It is thus not clear why object clitics should be viewed on a par with subject agreement in Greek.

In this section, we saw two basic arguments against Sportiche's analysis of clitics. Firstly, in doubling constructions the double has to be banned from moving to the specifier of the clitic-head in overt syntax. This is only guaranteed through assumptions that would not have been motivated otherwise.

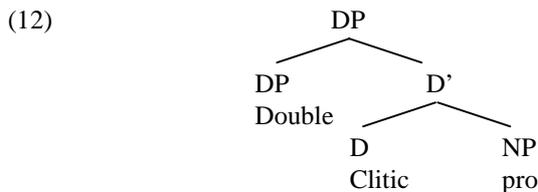
Secondly, Sportiche is forced to assume an object *pro*, in constructions without doubling. This *pro* is assigned the internal role of the verb. However, Greek lacks any independent evidence for the existence of object *pro*.

The alternative is to assume that pronouns are merged VP-internally.

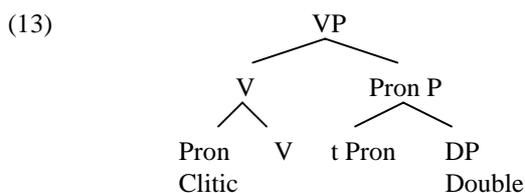
3. Reduced pronouns in the verbal complement position

In this section it is argued that pronouns start out, as complements of V. A DP-double may either be the specifier or the complement. The former is argued in Uriagereka (1995), based on Torrego (1998). I will argue for the latter.

Uriagereka (1995) argues that at least some clitics are Determiners that take the double as their specifier and a *pro* as their complement (the clitic moves to its surface position). The clitic and its double are presumably related through spec-head licensing and they are jointly assigned the internal theta-role of V:



Another possible hypothesis is that pronouns are functional heads that take a DP as their complement. The two are related through an operation of feature sharing that applies between the elements of a single extended projection. It is assumed that the clitic moves to its surface position. This movement is only possible if the clitic is the highest head in the extended nominal projection, due to the Head Movement Constraint:



Both analyses share the prediction that the double can be a DP (and not necessarily a NP). Reduced pronouns in Greek are not in complementary distribution with Determiners and the clitic obligatorily selects for a DP:

- (14) a. *Ton idha to Yani.*
 CL-3SG-M-ACC saw-1SG the-Yani-ACC
 'I saw Yani.'
- b. **Ton idha Yani.*
 CL-3SG-M-ACC saw-1SG Yani-ACC

So the Determiner is first merged with the NP and the pronoun is then merged with the DP (Tsimpili 1999 argues that genitive clitics in Greek are recursive Determiners).

Lastly, both analyses rule out pronominal doubling with subjects: subjects are islands for extraction. So, a reduced pronoun in subject position is probably related to its double through co-reference, which is not established in syntax. The situation is different with full pronouns: no extraction is needed.

As we will see in 3.1., the data in Greek support the idea that pronouns may form a constituent with their double. In 3.2., we will see evidence for generating the double as the complement of the reduced pronoun.

3.1. The similarity of full and reduced pronouns

I will now argue that the kind of doubling we find with reduced pronouns is also attested with full pronouns (i.e. they can also form a constituent with a DP).

Firstly, there is a strong morphological similarity in Greek between reduced pronouns and full personal pronouns: the former are usually identical to parts of the latter (either to an affix or to a part of the root):³

(15)

		Full forms		Reduced forms	
		Gen	Acc	Gen	Acc
1sg		emena(ne)	emena(ne)	mu	me
2sg		esena(ne)	esena(ne)	su	se
3sg	masc	aftu	afton(e)	tu	ton(e)
	fem	aftis	afti(n)(e)	tis	ti(n)(e)
	neut	aftu	afto	tu	to
1pl		emas	emas	mas	mas
2pl		esas	esas	sas	sas
3pl	masc	afton	aftus	tus	tus
	fem	afton	aftes	tus	tis - tes
	neut	afton	afta	tus	ta

(table based on Drachman 1997:221)

In addition, reduced and full pronouns appear in similar configurations: they can either replace a DP or appear together with it. In the latter, the full pronoun has a deictic interpretation (Holton, Mackridge & Philippaki-Warbuton (1997:318) provide examples where *aftos* ‘he’ functions as a demonstrative).

³A possible way of developing this is to say that they are all Ds. I am not going to pursue this any further in this paper.

Full pronouns can remain in situ and may appear adjacent to their double, while reduced pronouns always undergo movement:

- (16) a. O Yanis idhe ton andhra.
 the-Yanis saw-3SG the-man-ACC
 ‘Yanis saw the man.’
 b. O Yanis idhe afton.
 the-Yanis saw-3SG him-ACC
 ‘Yanis saw him.’
 c. O Yanis ton idhe.
 the-Yanis CL-3SG-M-ACC saw-3SG
 ‘Yanis saw him.’
 d. O Yanis idhe afton ton andhra.
 the-Yanis saw-3SG him/this- the- man-ACC
 ‘Yanis saw this man.’
 e. O Yanis ton idhe ton andhra.
 the-Yanis CL-3SG-M-ACC saw-3SG the- man-ACC
 ‘Yanis saw the man.’⁴

Furthermore, neither reduced nor full pronouns can precede a NP:

- (17) a. *O Yanis idhe afton andhra.
 the-Yanis saw-3SG him/this-man-ACC
 ‘Yanis saw this man.’
 b. *O Yanis ton idhe andhra.
 the-Yanis CL-3SG-M-ACC saw-3SG man-ACC
 ‘Yanis saw man.’

In addition, no adverbial can intervene between the pronoun and its co-referential DP, indicating that they form a constituent:

- (18) a. *O Yanis idhe aftus hthes tus anthropus.
 the-Yanis saw-3SG them/these yesterday the-men
 ‘Yanis saw these men yesterday.’
 b. O Yanis idhe (hthes) aftus tus anthropus (hthes).
 the-Yanis saw (yesterday) them/these- the-men (yesterday)
 ‘Yanis saw (yesterday) these men (yesterday).’

⁴A reduced and a full pronoun may also occur simultaneously with a DP:

O Yanis ton idhe afton ton andhra.
 the-Yanis cl-3sg-acc saw-3sg him/this- the-man-acc
 ‘Yanis saw this man.’

This may again be analysed as a recursive D position (see also foot. 3)

If, on the other hand, the DP is in apposition, an adverbial may intervene between the pronoun and its double. This is the case in (20) where the appositional structure is marked by a long intonational break:

- (19) O Yanis idhe esas **hthes** # tus naftikus
 the-Yanis saw-3SG you-PL-ACC yesterday the-sailors-ACC
tu nisiu.
 the-island-GEN
 ‘Yanis saw you yesterday, the sailors of the island.’⁵

So, we have seen evidence that full pronouns may form a constituent with a DP-double. We will now investigate the position of the double.

3.2. Pronouns take a DP-double as their complement

The evidence I have presented so far is neutral between an analysis of clitic doubling where the double is the specifier of the clitic-head and an analysis that assumes that the double is the complement of the clitic. In this section I will argue that the double is the complement of the pronoun.

If we accepted Uriagereka’s proposal, namely that the double is the specifier, we would expect to find constructions where the clitic/Determiner takes a full NP as its complement and a full DP as its specifier. This prediction is not borne out:

- (20) *Ton katalava ton andhra proedhro.
 CL-3SGM-ACC understood-1SG the-man-ACC president-ACC
 ‘I understood the man president.’

It seems necessary to assume that clitics do not take phonologically overt complements. However, there is no independent motivation for this.

In addition, we would expect the N-head merged in the complement position (or the Determiner) to assign a theta-role to the DP in the specifier position, on a par with possessives:

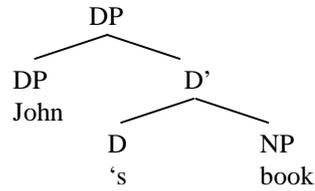
⁵The situation is different in a language without morphological case, like Italian:

- i) Gianni I’ ha visto # I’ uomo con I capelli lunghi.
 Gianni CL-3SG-M-ACC has seen # the man with the hair long
 ‘Gianni has seen the man with the long hair.’
 ii) Gianni ha visto lui # I’ uomo con I capelli lunghi.
 Gianni has seen him # the man with the hair long
 ‘Gianni has seen him, the man with the long hair.’

The only available option is that reduced and full pronouns are co-referential with a DP in apposition. Moreover, a demonstrative can only precede a NP (not a DP), unlike Greek:

- iii) Ho visto quell’ uomo.
 have-I seen this man
 ‘I have seen this man.’

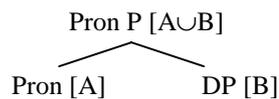
(21)



In pronominal doubling, though, only one lexical head is generated: the noun-double of the pronoun. In the absence of a second lexical head no operation of theta-role assignment is expected to be active within the DP. The functional heads that are merged in the extended nominal projection cannot contain features that clash with those of the lexical head (Grimshaw 1991). So, the operation of feature sharing that applies within a single projection allows for the pronoun and its double to be interpreted as a single argument (visibility).

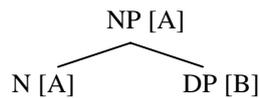
To sum up, the pronoun cannot contain features that clash with those of the noun-double. In particular, it can be argued that two sets of features A and B are unified in one $A \cup B$:

(22)



In the case of a noun taking a DP as its complement, on the other hand, two lexical projections are involved and two operations of feature sharing are active. The crucial point is that no operation of feature sharing applies between the elements of different projections, so they are allowed to carry non-matching features. In this case, only the features of the N-head percolate upwards:

(23)



So, in Uriagereka's analysis of clitic doubling two extended projections are merged, implicating that the pronoun and its double are allowed to carry clashing features. Given that in general there does not need to be spec-head agreement in DPs (like in possessives which either carry genitive, even if the D-head carries accusative, or dative in German dialects in examples like *dem Mann sein Buch* 'the man's book'). If the pronoun is a functional head in the extended nominal projection, on the other hand, it is predicted that the pronoun and its double always have identical grammatical features. This is borne out:

- (24) a. **Tu idha to Yani.* Case
 CL-3SG-M-GEN saw-1SG the-Yani-ACC
 'I saw Yani.'

- b. *Idha ton kipo tu spitu.*
 saw-1SG the- garden-ACC the-house-GEN
 'I saw the garden of the house.'
- c. **Ton idha ti Maria.* Gender
 CL-3SG-M-ACC saw-I the-Maria-ACC
 'I saw Maria.'
- d. *Idha ton patera tis Marias.*
 saw-I the- father-ACC the-Maria-GEN
 'I saw Maria's father.'
- e. **Ton idha tus andhres.* Number
 CL-3SG-M-ACC saw-1SG the-men
 'I saw the men.'
- f. *Idha ton patera ton koritsion.*
 saw-1SG the- father-ACC the- girls-GEN
 'I saw the father of the girls.'
- g. **Se idha to Yani.* Person
 CL-2SG saw-1SG the-Yani-ACC
 'I saw Yani.'
- h. *Idha ton patera su.*
 saw-1SG the- father-ACC your-GEN
 'I saw your father.'

If the reduced pronoun does not have the same grammatical features as its double, the configuration is ungrammatical (see Philippaki (1987) for a similar observation). If, on the other hand, a noun takes a DP as its complement the two elements are allowed to have clashing features.

In the same vein, it is predicted that the pronoun always has the same categorial feature as its double. This is borne out in Greek: the IO is expressed either with a DP carrying genitive case or with a PP:

- (25) *Edhosa tu Yani / sto Yani ta lefta.*
 gave-1SG the-Yani / P-the- Yani the-money-ACC
 'I gave (to the) Yani the money.'

The presence of syntactic material (i.e. the DO) following the IO shows that both the DP *tu Yani* 'the-Yani-gen' and the PP *sto Yani* 'to-the-Yani' are not in a right dislocated position, but presumably they are merged VP internally.

However, it is only possible to double a reduced pronoun by an IO DP:

- (26) *Tu edhosa tu Yani (*sto Yani) ta lefta.*
 CL-3SG-GEN gave-1SG the-Yani-GEN P-the- Yani the-money-ACC
 'I gave Yani the money.'

If P-heads are not nominal (Neeleman 1997) the presence of a pronoun in the extended projection is banned: the two elements would carry clashing categorial features. So, a pronoun can only take a DP as its complement.

We will now see further evidence for the DP-double being a complement: it is possible to extract from the DP-double of a reduced pronoun in Greek:⁶

- (27) a. O Yanis *to* *troi to pastitsio* *apo*
 the-Yanis CL-3SG-N-ACC eats the-pastitsio-ACC from
ti mana tu.
 the-mother-ACC his
 ‘Yanis eats the pastitsio of his mother’s.’
- b. *Apo ti mana tu* o Yanis *to troi*
 from the-mother-ACC his the-Yanis CL-3SG-N-ACC eats
to pastitsio.
 the-pastitsio-ACC
 ‘From his mother Yanis eats pastitsio.’

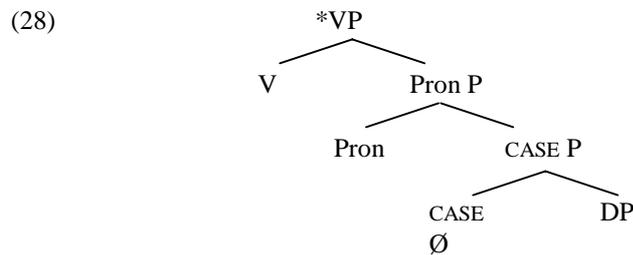
The PP *apo ti mana tu* ‘from his mother’ is extracted from the DP *to pastitsio apo ti mana tu* ‘the pastitsio from his mother’.

We will now see that pronominal doubling in syntax is only possible in languages with a rich case paradigm on nouns.

4. The relevance of morphological case

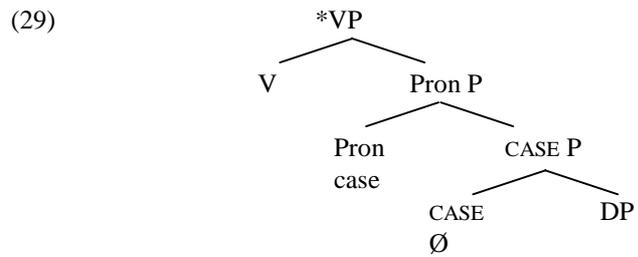
I assume following Neeleman & Weerman (1999) that CASE is a functional head generated on top of every case-marked DP. Neeleman & Weerman develop a minimalist model of grammar, which contains a variant of the ECP, which applies at PF, its natural locus given the assumptions of Chomsky (1995) (see also Aoun et al. 1987 and Rizzi 1990). The implication is that if CASE is not spelled out the CASE-head has to meet the ECP.

A reduced pronoun merged in the highest head of the extended nominal projection rules out licensing the CASE-head by the verb. The pronoun cannot license the double, due to its nominal character: the empty head can only be licensed by a head of a different category (Neeleman & Weerman 1999):

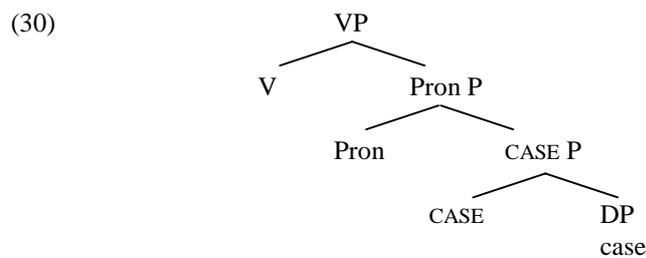


⁶Alexiadou & Anagnostopoulou (2000) also argue that the double of a clitic may occupy a complement position, but it is the complement of V. There is another option: the double may appear in a right dislocated position. In this case, it can be argued that the pronoun is associated with the DP through co-reference, established outside the module of Syntax.

The presence of morphological case on the reduced pronoun does not license the CASE-head on the assumption that features percolate upwards:



We may thus assume that doubling is allowed only in languages with a rich case paradigm on nouns:



The prediction is borne out: extraction from the double of a pronoun is ruled out in Spanish, a language without morphological case on nouns:

- (31) a. *La vimos a la hermana de Juan.*
 CL-3SG-F-ACC saw-1PL P the sister of Juan
 ‘We saw Juan’s sister.’
 b. **De Juan la vimos a la hermana.*
 of Juan CL-3SG-F-ACC saw-1PL P the sister
 ‘Juan’s we saw the sister.’

Extraction of the PP *de Juan* ‘of Juan’ from the complex PP *a la hermana de Juan* ‘to the sister of Juan’ is ruled out. This is consistent with an analysis of the PP as an adjunct.

Extraction is possible only in the absence of a reduced pronoun:

- (32) a. *Vimos a la hermana de Juan.*
 saw-1PL P the sister of Juan
 ‘We saw Juan’s sister.’
 b. *De Juan, vimos a la hermana.*
 of Juan saw-1PL P the sister
 ‘Juan’s we saw the sister.’

In this case, we may assume that the PP is generated in the verbal complement position.⁷

5. Conclusion

I have argued that pronominal clitics (i.e. reduced pronouns) are functional heads that may take a DP as their complement. The two elements start out as a constituent and they are thus jointly assigned the internal theta-role of the verb.

An immediate prediction is that the clitic cannot contain features that clash with those of the double. This is borne out in Greek: the pronoun and the DP-double carry identical grammatical features and they have to be of the same category. That is, a clitic cannot be doubled by a PP.

In addition, we saw that the same kind of doubling is available with other pronouns: a full pronoun in Greek may also form a constituent with a DP. Full pronouns can remain in situ so they appear adjacent to their double, while reduced pronouns need to undergo movement. A pronoun may also be associated with a DP in apposition through co-reference, established outside the module of syntax.

Lastly, it has been argued that the clitic may take a DP-double as its complement only in languages with a rich case paradigm on nouns. This is borne out: extraction from the DP-double is possible in Greek, a language with morphological case on nouns. However, extraction is ruled out in Spanish, a language without morphological case on nouns. So, the double is a complement in Greek (the complement of the clitic-head), while it is an adjunct in Spanish.

Acknowledgements

I would like to thank Ad Neeleman for all his help. Also thanks to Michael Brody, Dirk Bury, Hans van de Koot, Anna Roussou, Ourania Sinopoulou, Neil Smith and Dimitra Teofanopoulou for their comments, Jane Grimshaw, Irene

⁷Similar is the situation in Italian:

- i) Abbiamo vista la sorella di Maria.
have-1PL seen-F the sister of Maria
'We have seen the sister of Maria.'
- ii) **Di Maria** abbiamo vista la sorella.
of Maria have-1PL seen-F the sister
'Maria's, we have seen the sister'
- iii) *L* abbiamo vista # la sorella di Maria.
CL-3SG-F-ACC have-1pl seen-F the sister of Maria
'We have seen the sister of Maria.'
- iv) ***Di Maria**, l' abbiamo vista la sorella.
of Maria CL-3SG-F-ACC have-1PL seen-F the sister
'Maria's, we have seen the sister.'

The contrast between the examples ii) and iv) indicates that the DP is in a complement position in i) and ii) but not in iii) and iv) In the latter it is in a right dislocated position.

Philippaki and Tanya Reinhart for some discussions. This paper is an abbreviation of Papangeli, D. (2001). Pronominal doubling in Greek: a head-complement relation. Ms, University College London.

References

- Abney, P.S. (1987). *The English noun phrase in its sentential clause*. Diss, MIT, Cambridge, MA.
- Ackema, P. & A. Neeleman (1998). Optimal questions. *Natural Language and Linguistic Theory* 16:3, pp. 443-490.
- Agouraki, Y. (1993). *Spec-head licensing: The case of foci, clitic-constructions and polarity items: A case study of Modern Greek*. Diss, University College London.
- Alexiadou A. & E. Anagnostopoulou (2000). Clitic-doubling and (non-) configurationality. *NELS* 30.
- Anagnostopoulou, E. (1994). *Clitic dependencies in Modern Greek*. Diss, Universität Salzburg.
- Aoun, J., N. Hornstein, D. Lightfoot & A. Weinberg (1987). Two types of locality. *Linguistic Inquiry* 18, pp. 537-577.
- Borer, H. (1984). *Parametric syntax: Case studies in Semitic and Romance Languages*. Foris, Dordrecht.
- Chomsky, N. (1995). *The minimalist program*. MIT Press, Cambridge, MA.
- Cinque, G. (1990). *Types of A-bar dependencies*. MIT Press, Cambridge, MA.
- Drachman, G. (1997). Some properties of clitics (with special reference to modern Greek). Alexiadou A. & A. Hall (eds.), *Studies on Universal Grammar and typological variation*. *Linguistik Aktuell* 13, pp. 219-248.
- Grimshaw, J. (1991). Extended Projection. Ms, Brandeis University.
- Holton, D., P. Mackridge & I. Philippaki-Warbuton (1997). *Greek: A comprehensive grammar of them modern language*. Routledge, London.
- Jaeggli, O. (1984). Subject extraction and the null subject parameter. *NELS* 14.
- Neeleman, A. (1997). PP-complements. *Natural Language and Linguistic Theory* 15, pp. 89-137.
- Neeleman, A. & F. Weerman (1999). *Flexible syntax. A theory of case and arguments*. Kluwer, Dordrecht.
- Philippaki-Warbuton, I. (1987). Empty categories and the pro-drop parameter in Greek. *Journal of Linguistics* 23, pp. 289-318.
- Reinhart, T. (1983). *Anaphora and semantic interpretation*. Croom Helm Linguistics Series.
- Rizzi, L. (1990). *Relativized minimality*. MIT Press, Cambridge, MA.
- Rizzi, L. (1986). Null objects in Italian and the theory of pro. *Linguistic Inquiry* 17, pp. 501-557.
- Sportiche, D. (1992/1998). Clitic constructions. Ms, UCLA. / *Partitions and atoms of the clause structure. Subjects, case and clitics*. Routledge Leading Linguists, pp. 244-307.
- Torrego, E. (1998). *The dependencies of objects*. MIT Press, Cambridge, MA.
- Tsimpli, I.-M. (1995). Focusing in modern Greek. Kiss E. K. (ed.), *Discourse configurational languages*. Oxford University Press, New York, pp. 176-206.
- Tsimpli, I.-M. (1999). Null operators, clitics and identification: a comparison between Greek and English. Alexiadou, A., J. Horrocks, & M. Stavrou (eds.), *Studies in Greek syntax*. Kluwer, Dordrecht, pp. 241-262.
- Uriagereka, J. (1995). Aspects of the syntax of clitic placement in western romance. *Linguistic Inquiry* 26, pp. 79-123.

Local licensing and feature copy in language production

Roland Pfau

In the last 30 years, psycholinguists have developed language production models based on speech error evidence. In particular, it has been shown that different processing levels have to be distinguished between a preverbal message and the articulation of an utterance. However, only few attempts have been made to relate the processing models to a particular grammar theory. In this paper, I am going to show that the Distributed Morphology framework allows for a straightforward explanation of certain intricate error data that involve the manipulation of morphosyntactic features and/or the application of context-sensitive phonological and morphological rules.

1. Introduction

Historically, errors in spontaneous speech, i.e. slips of the tongue, have been collected and studied for various reasons. Many of the early studies in this field were motivated by an interest in speech errors as a possible cause of historical linguistic change (Sturtevant 1917; Jespersen 1922). A second motivation for studying errors - and probably the most familiar one outside of linguistic circles - was to gain insight into psychological repressions. Sigmund Freud (1901/1954), for instance, was convinced that speech errors reveal our suppressed emotions and desires.

Thirdly, spontaneous errors also played an increasingly important role in psycholinguistic attempts to construct linguistic performance models (Fromkin 1971; Garrett 1975, 1980a,b; Dell 1986; Berg 1988; Levelt 1989). The crucial questions are: What kinds of (possibly ordered) processes mediate between a communicative intention and the articulation of an utterance? And, closely related: What role do grammatical units and rules play in the generation of an utterance?

In the following, I shall only be concerned with the third of the above mentioned possible motivations for doing speech error research. That is, I will focus on what grammar theory can tell us about the nature of speech errors and - vice versa - what speech errors can tell us about the nature of grammar. Slips of the tongue (as well as other behavioral data, e.g. acquisition data and data

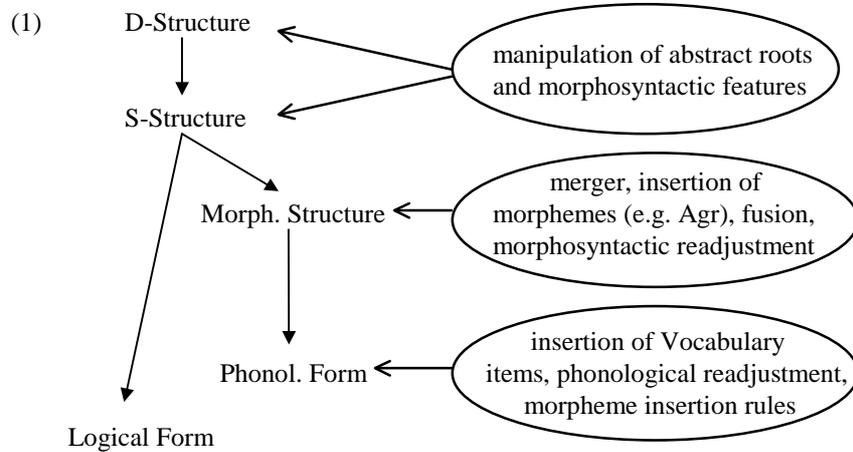
from impaired speakers) are of interest to linguists because of the implicit or explicit acceptance of the assumption that the rules of grammar enter into the processing mechanism such that 'evidence concerning production, recognition, [...] and language use in general can [...] have bearing on the investigation of rules of grammar' (Chomsky 1980:200f). This, in turn, implies that meaningful psycholinguistic analyses of error data can only be made against the background of significant hypotheses concerning the structure, i.e. the grammar, of the language in question.

In this paper, I will try to supply an analysis of spontaneous error data in the light of a particular theory of grammar. Please note that I adopt the assumptions of weak mentalism (Katz 1964; Ringen 1975; Chomsky 1980). I am going to investigate whether a particular theory of grammar - the Distributed Morphology framework - is successful in providing explanations for a certain kind of speech error data. In doing so, however, I am not going to claim that every detail of the theory - theoretical constructs like e.g. V-to-I movement - must be isomorphic to some psychological counterpart. Rather, I will demonstrate that Distributed Morphology makes for a psychologically real theory of grammar in the sense that it is accurate for the data under investigation. That is, it explains the available evidence and moreover, it makes correct predictions about possible and impossible errors.

2. Distributed Morphology

Below, I can only give a brief summary of the basic assumptions of Distributed Morphology (Halle & Marantz 1993, 1994; Harley & Noyer 1998, 1999). I will highlight those aspects of the theory that are relevant for the subsequent discussion of speech errors while neglecting those details that are not of direct importance in the present context.

The theory of Distributed Morphology (DM) is separationistic in nature in that it adopts the idea that the mechanisms which are responsible for producing the form of syntactically complex expressions are separate from the mechanisms which produce the form of the corresponding phonological expressions. That is, the computational system is taken to manipulate nothing but abstract roots and morphosyntactic features. Phonological features are assigned to terminal nodes in a syntactic structure only after syntax at the level of Phonological Form by means of Vocabulary insertion. The structure at PF, however, is not necessarily isomorphic to the syntactic structure. At the level of Morphological Structure which is taken to be the interface between syntax and phonology, various operations may change the structure and number of terminal nodes. Agreement nodes, for instance, are taken to be implemented at this level and agreement features are copied onto these nodes.



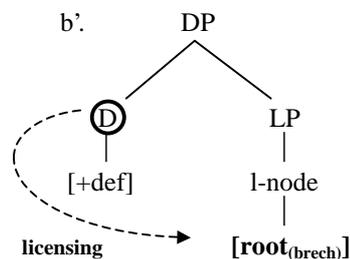
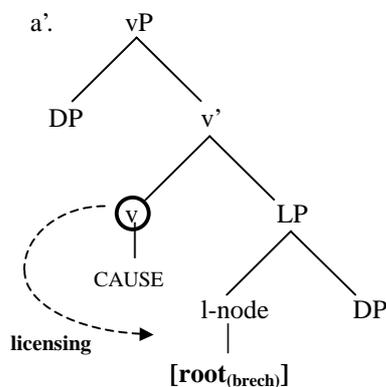
At PF, readjustment rules may apply that change the phonological form of already inserted Vocabulary items in certain syntactic contexts (the verb *sing*, for example, will be subject to ablaut in the context of a [+past] feature). Moreover, morphemes may be supplied by means of morpheme insertion rules. I will come back to these rules shortly.

One particularly important assumption of Distributed Morphology is that the traditional terms for sentence elements (such as noun, verb, and adjective) are taken to have no universal significance and are essentially derivative from more basic morpheme types (Marantz 1997, Harley & Noyer 1998). That is, there is only one type of lexical node (l-node) whose categorial status is defined by its context. A noun, for instance, is a root whose nearest c-commanding functional node is a determiner: that is, a noun is a root which is locally licensed by a determiner. In contrast, a verb is a root that is locally licensed by a light verb.

Consider the following two examples:

(2) a. Peter bricht den Stock
Peter breaks the stick

b. der Bruch
the breaking



Since the l-nodes lack a categorial specification, the phrase they project is

labeled LP. In both structures in (2), the l-node hosts the same root. In (2a), the verbal status of [root_(brech)] ‘break’ is created by inserting a Vocabulary item into a terminal node that is governed by a light verb. The l-node will be combined with the CAUSE morpheme in *v* to yield the transitive verb in a sentence like ‘Peter breaks a stick’. In (2b), the nominalization of the same root is the result of inserting a Vocabulary item into a node that is governed by a determiner. In both structures, the Vocabulary item that is inserted will be the same. Depending on the context of insertion, however, different phonological readjustment rules will apply after insertion of the Vocabulary items. The stem change in (2a) is due to the agreement feature 3rd person singular, while the stem change in (2b) is due to the licensing environment.

Let me repeat the following crucial facts: According to DM, only categorially nonspecified abstract roots and morphosyntactic features are manipulated in the syntax. At the level of Morphological Structure, certain structure-changing operations may apply and agreement nodes are implemented. At PF, Vocabulary items are inserted, some of which are subject to phonological readjustment. Phonological readjustment rules may either be triggered by morphosyntactic features or in certain licensing environments.

3. Reconciliation of processing conflicts in speech errors

I shall now introduce some of the error data that I will be dealing with in the remainder of this talk. All of the errors have in common that in the erroneous utterance, a conflict between two elements has been reconciled by means of a process of post-error adaptation. Consequently, the utterances that surface may be awkward but still, they are fully grammatical. Consider, for instance, the examples given in (3).¹

- (3) a. irgendwie habe ich heute eine **Zunge** im **Knoten**
 somehow have I today a.f tongue(f.) in.the.m knot(m.)
 ← einen Knoten in der Zunge
 ← a.m knot(m.) in the.f tongue(f.)
 [⇒ not: *irgendwie habe ich heute einen **Zunge** in der **Knoten**]

¹ Note that I always give the erroneous utterance first and then, on the right hand side of the arrow, the intended utterance. Whenever there is no arrow in an example, the error was self-corrected by the speaker. The error elements are in bold type while the elements that undergo post-error adaptation are underlined. Moreover, below each example, you will find the utterance that would have surfaced if adaptation had not taken place. Also note that whenever no source is given, the slip is taken from my own corpus.

- b. un **duro** de veinte **moneda-s**
 a.m 5.pesetas(m.) of twenty coin-PL
 ← una moneda de veinte duro-s
 ← a.f coin(f.) of twenty 5.peseta-PL
 ‘a one hundred pesetas coin’ (Garcia-Albea et al. 1989:152)
 [⇒ not: *una **duro** de veinte **moneda-s**]
- c. **you’re** too good for **that**
 ← that’s too good for you (Stemberger 1982:344)
 [⇒ not: ***you** (i)s too good for **that**]
- d. bis er es bei dir abhol-t,
 until 3.SG.m.NOM it from 2.SG.DAT pick.up-3.SG
 bis du es bei ihm abhol-st
 until 2.SG.NOM it from 3.SG.m.DAT pick.up-2.SG
 ‘until you pick it up from him’ (Berg 1987:282)
 [⇒ not: *bis **ihm** es bei **du** abhol-st]

In the German slip in (3a), the two nouns *Knoten* ‘knot’ and *Zunge* ‘tongue’ are exchanged leaving behind their respective articles. The two nouns are of different gender (masculine and feminine, respectively) and after the error has taken place, both of the articles adapt to the gender feature of the intruding noun. The same is true for the Spanish exchange error in (3b). Again, the indefinite article surfaces in its appropriate masculine form. In (3c), a personal and a demonstrative pronoun are exchanged. The verb, however, appears with the feature specification of the new element in subject position, i.e. the ungrammatical string **you is too good for that* does not surface. The error in (3d) is similar but the consequences are more complex. In this slip, the exchanged pronouns land in positions with different case specifications and are spelled out accordingly. Moreover, as in the English example in (3c), the verb adapts to the person features of the new pronoun in subject position.

In these four errors, the adaptation process is of a morphosyntactic nature. That is, the adaptation is triggered by morphosyntactic features such as person and gender. A different kind of adaptation takes place in the following three slips of the tongue:

- (4) a. I think it’s **care-ful** to measure with **reason**
 ← it’s reasonable to measure with care (Fromkin 1973:31)
 [⇒ not: *I think it’s **care-able** to measure with **reason**]
- b. das ist wirklich eine **farb-ig-e**, äh, eine schön-e Farbe
 that is really a.f colour-ADJ-f, er, a.f nice-f colour(f.)
 [⇒ not: *das ist wirklich eine **farb-e**, äh, eine schöne Farbe]

- c. dass er mit dem **Zug** zieh-t
 that he with the.m. procession(m.) move-3.SG
 ← mit der Masse zieh-t
 ← with the.f crowd(f.) move-3.SG
 [⇒ not: *dass er mit der **Zieh** zieht]

In the English slip in (4a), two word stems are exchanged. In the erroneous utterance, the stem *care* appears with the appropriate adjectival suffix *-ful* which, however, was not part of the intended utterance; i.e. we don't get *I think it's careable to measure with reason*. Due to the self-repair, for the error in (4b), it cannot be decided if we are dealing with an anticipation or with an incomplete exchange. In any case, the error element *farb* 'colour' appears in its new slot with an adjectival suffix which, again, would not have appeared in the intended utterance. The anticipation in (4c) is more complex: In this particular slip, we observe two changes. Firstly, the stem *zieh* 'to move' lands in a noun position in which it is subject to stem-internal changes. Secondly, in the error, the definite article accommodates to the new stem. Note that in this particular error, the error element itself as well as the environment of the anticipated item are subject to a change.

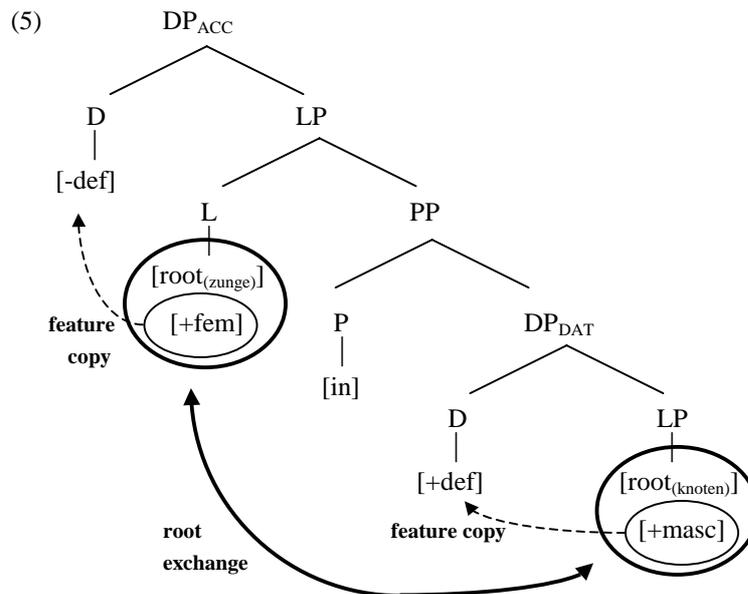
In the psycholinguistic literature, errors like the ones presented here are referred to as accommodations. In multi-level language production models, such errors are taken to involve two distinct steps (Garrett 1980a,b; Levelt 1989). I do not wish to go into the details of language production models. I just want to point out that in these models, it is assumed that the actual error - be it an exchange or an anticipation - occurs at an early processing level. At a subsequent level, the adaptation of either the error element or of its environment to certain grammatical well-formedness restrictions takes place (e.g. agreement within DP, subject-verb agreement).

A typical definition of accommodation is given by Berg (1987:277). He states that an accommodation is 'a process whereby a processing conflict between the actual error and the context of the original utterance is reconciled'. Berg assumes that this is evidence for the fact 'that the processing system is sensitive to the eventual output' and that '[a]ccommodation can thus be viewed as a blind repair process which brings utterances in line with linguistic constraints'. Obviously, the rules of grammar are an essential factor in linguistic behavior, that is, the rules of grammar enter into the processing mechanism. Still, Berg - as well as many other psycholinguists - does not commit himself to a particular theory.

In the following, I am going to show that errors such as those in (3) and (4) receive a straightforward explanation within the Distributed Morphology framework. In contrast to Berg (1987), I am going to claim (i) that no processing conflict is reconciled in an accommodation, (ii) that therefore no repair strategy is involved, and (iii) that output oriented processing need not be assumed for accommodations.

4. Rethinking accommodation

Let us first have another look at the slip given in (3a). In DM, it is assumed that only abstract roots and features are manipulated in the syntax. In German, the roots that are selected must be specified for gender, i.e. they must be linked to a gender feature. In (5), you will find a partial tree structure for this error after the root exchange has taken place.



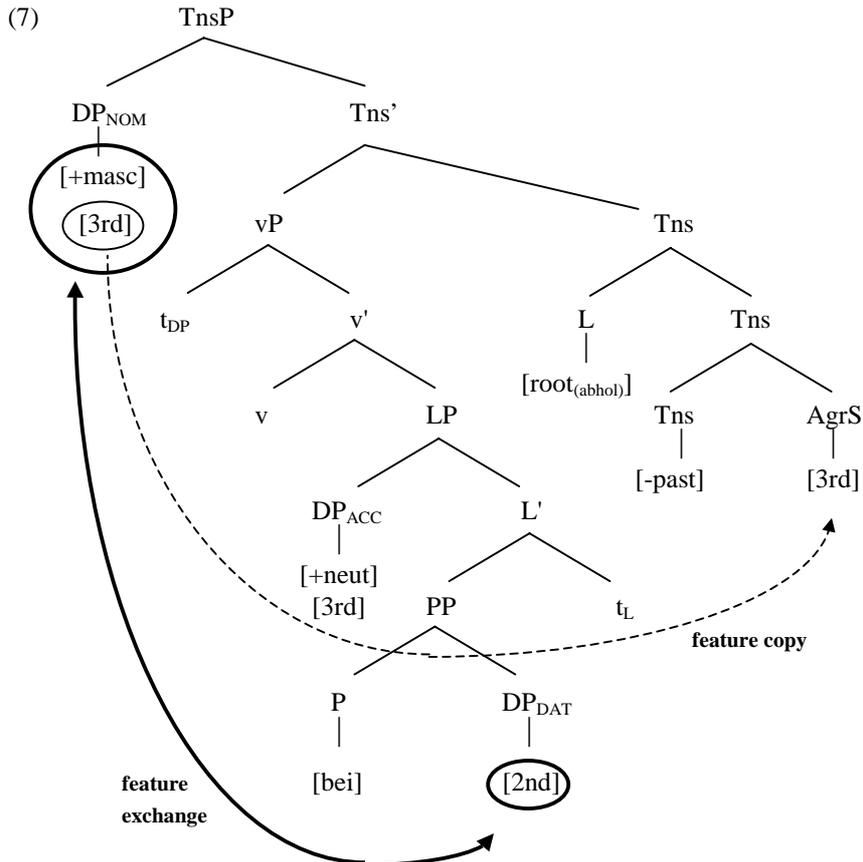
After the root exchange has taken place, the gender features of the exchanged roots are copied onto the respective determiner positions. At PF, the Vocabulary items that best match the feature bundles in these terminal nodes will be inserted. The Vocabulary items for the two determiner positions are given in (6). Please note that a Vocabulary item is not merely a phonological string; rather, it also contains information about where that particular string may be inserted.

- (6) a. [-def] [+fem] [ACC] \longleftrightarrow /ainə/
 b. [+def] [+masc] [DAT] \longleftrightarrow /de:m/

The fact that a grammatical utterance surfaces indicates that the error must have occurred before gender features are copied from the roots onto the determiners. The same is true for the Spanish error in (3b).

A similar phenomenon can be held responsible for the adaptation of the verbs in (3c) and (3d). What is exchanged in those errors are not roots but rather feature bundles. Remember that in DM, agreement nodes are only implemented after syntax at the level of MS and subsequently, features from the

subject are copied onto the agreement node. The post-error structure for the exchange in (3d) is given in (7).



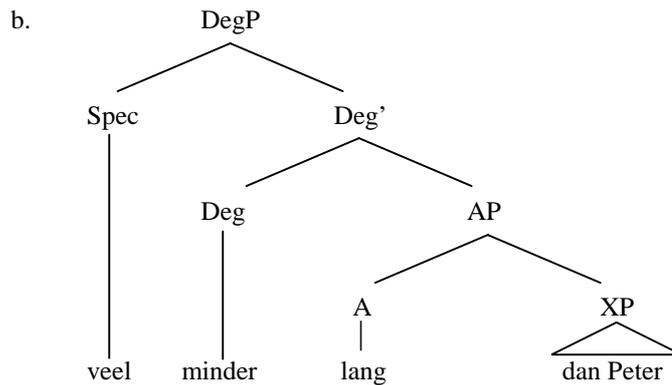
At the level of Morphological Structure, case will be assigned to the DPs and the person feature [3rd] will be copied onto the agreement node. Again, the Vocabulary items that best match the feature bundles contained in the terminal nodes will be inserted at PF. The Vocabulary items that will be inserted into the relevant nodes are given in (8).

- (8)
- | | | | |
|----|---------------------|---|--------|
| a. | [3rd] [+masc] [NOM] | ↔ | /e:v/ |
| b. | [2nd] [DAT] | ↔ | /di:v/ |
| c. | [3rd] | ↔ | /-t/ |

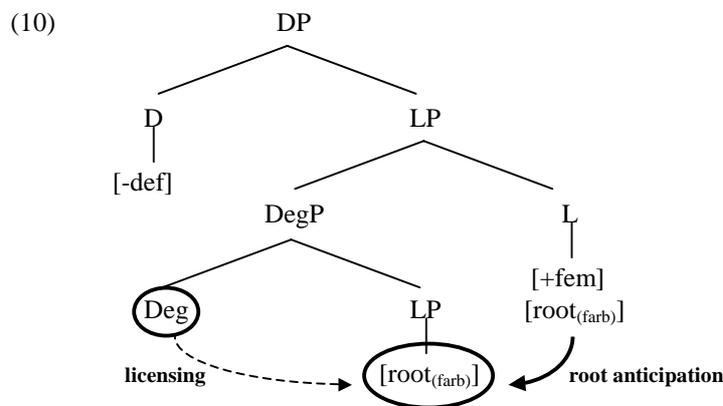
Consequently, the grammaticality of the examples discussed so far is due to feature copy at MS and to the insertion of the appropriate Vocabulary items at PF. However, these are the simple cases. We have not yet considered the role of phonological readjustment and morpheme insertion rules. Such rules come into play when we analyze the errors in (4).

Let us first consider the error in (4b). In this slip, a noun is anticipated into an adjective slot. I have already mentioned that in DM, it is assumed that roots are acategorial in nature. A noun is taken to be a root that is locally licensed by a determiner while a verb is a root that is locally licensed by a light verb. But what about adjectives? As far as adjectives are concerned, I follow Corver (1991, 1997) who argues that the functional head analysis which has been applied to the verbal and nominal domain should be extended to the adjectival system. He proposes that degree words which traditionally have been analyzed as occupying the specifier of an adjective phrase (Jackendoff 1977) should rather be interpreted as heading a functional degree phrase (DegP). The specifier position of DegP can host various elements qualifying the degree word. An exemplary DegP structure for the Dutch phrase in (9a) is given in (9b). In this structure, the degree word *minder* ‘less’ heads the DegP while the modifying element *veel* ‘much’ occupies SpecDegP (Corver 1997:292).

- (9) a. veel minder lang dan Peter
 much less tall than Peter



Consequently, we may assume that in the slip (4b), the root is anticipated into a position that is licensed by an empty degree element, as indicated in (10).

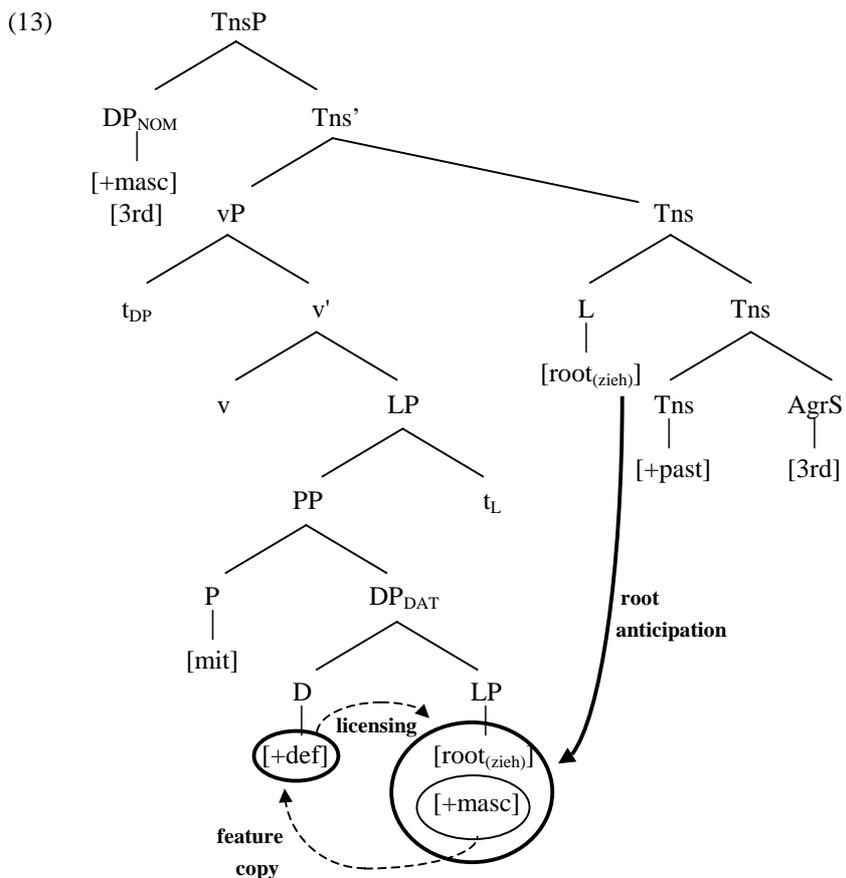


At the level of Phonological Form, the anticipated root will be spelled out by the Vocabulary item given in (11). This, however, is not yet the end of the story, since for this particular root, a morpheme insertion rule is triggered in an environment in which it is licensed by a degree element. The morpheme insertion rule that inserts the suffix *-ig* - formerly known as an adjectival suffix - is given in (12).

(11) $[\text{root}_{(\text{farb})}] \leftrightarrow / \text{farb} /$

(12) Insert */-ig/* / X / [+deg]
 (where X = *farb, wind, krach, noise* ...)

The last slip, I want to discuss in some detail is the root anticipation in (4c). For this error, the fact that a grammatical utterance surfaces is due to copy of the gender feature onto the determiner at MS and to the application of a phonological readjustment rule at PF. In (13), you will find the structure for this error after anticipation of the root.



Once again, the root anticipation must have taken place before the level of Morphological Structure, since at this level, the gender feature of the intruding root is copied onto the determiner. At PF, the Vocabulary items that best match the features and roots contained in the terminal nodes will be selected for insertion. The two Vocabulary items relevant for the error (4c) are given in (14).

- (14) a. [+def] [+masc] [DAT] ←→ /de:m/
 b. [root_(zieh)] ←→ /tsi:/

Moreover, a phonological readjustment rule will change the phonological form of the Vocabulary item that spells out the root in case this root is locally licensed by a determiner. The relevant readjustment rule is given in (15).²

- (15) /tsi:/ → /tsu:g/ / [+d]

The four errors I have discussed in some detail illustrate how DM mechanisms - feature copy, phonological readjustment, and morpheme insertion rules - allow us to account for the surface form of the erroneous utterances in a straightforward way (cf. Pfau (2000) for more examples that involve the application of such mechanisms in slips of the tongue).

Please note that all the mechanisms involved in the emergence of these errors are mechanisms which according to DM apply in the derivation of an utterance anyway. That is, agreement features must be copied before Vocabulary insertion takes place in order to facilitate selection of the appropriate Vocabulary items. Moreover, at PF, phonological readjustment rules may change the phonological form of already inserted Vocabulary items and morpheme insertion rules may insert morphemes in certain licensing environments. Once again: all these operations apply anyway and consequently, we need not assume repair strategies of any kind in order to explain errors such as those in (3) and (4) above. For the same reason, output-oriented processing need not be assumed. Rather, we may maintain the idea that the processor is blind to the eventual output. I therefore conclude that the psycholinguistic concept of accommodation is superfluous and should be abandoned.

² Things get more complicated when we take into account that *Zug* is not the only possible surface form of [root_(zieh)] in a [+deg]-environment, another common form being *Ziehung* 'draw', for example, which does not involve the application of a phonological readjustment rule but the insertion of a morpheme.

A possible way to account for such problematic cases might be to assume that light verb heads also play a role in certain nominalizations. Therefore, these nominalizations do not only contain a nominalizing environment (D) but also a verbalizing environment (v) (Marantz 1997). Consequently, the crucial difference between, for instance, *Zug* and *Ziehung* – both derived from [root_(zieh)] – might be that in the first, a BE (or CAUSE) morpheme occupies the light verb head within the DP while in the latter, the light verb head within DP hosts a BECOME morpheme.

5. When adaptation fails

All of the slips presented so far must occur at a processing stage at which features were not yet copied and readjustment and insertion rules have not yet applied. That is, they must occur before (or possibly at) the level of Morphological Structure. Otherwise, the grammatical outcome could not be explained.

However, errors may also occur at PF, i.e. after the insertion of Vocabulary items. Sound errors, for instance, can only occur at this level, since no phonological material is available before PF (e.g. the sound exchange *with this wing I do red* ← *with this ring I do wed* (Fromkin 1971:31)). Now, consider the exchange errors in (16). At first sight, these slips look very similar to the ones presented before. Still, they have different characteristics. Most importantly, they both result in ungrammatical utterances. I assume that this is due to the fact that they occur at PF. This implies that it is not roots what is exchanged here but rather words or morphemes, i.e. phonologically spelled out forms.

- (16) a. der Mann hat mich **Straf-en** *ge-lüg-t
 the man has me punish-PL lie-PART
 ← Lüg-en ge-straft
 ← lie-PL punish-PART
 ‘The man has given the lie to me.’
 [⇒ not: der Mann hat mich **Straf-en** ge-log-en]
- b. mein ***Stirb**-chen **bäum-t** ← mein Bäum-chen stirb-t
 my die-DIM tree-3.SG ← my tree-DIM die-3.Sg
 [⇒ not: mein Sterb-chen **bäum-t**]

In (16a), the verb stem does not appear in its participial form. If two roots had been exchanged before MS, then a phonological readjustment rule would have changed the vowel quality of the stem in the context of a participial feature and the appropriate participial suffix would have been inserted. In the error, however, no such change is affected. The German verb *sterben* ‘to die’ is subject to a phonological readjustment rule in the 3rd person singular. In (16b), this verb is obviously shifted in its readjusted form. We must therefore assume that the error occurs after readjustment has applied at PF. Once again, phonological forms were exchanged and not roots.

Further interesting evidence for the possible occurrence of slips at different stages in the derivation of an utterance comes from noun substitution errors. These are of two different kinds: the target and the intruding noun are either meaning- or form-related. We may assume that meaning-related substitutions occur when roots are selected which enter the computational system, while form-based substitutions occur at the point of Vocabulary insertion. That is, roots are organized in a network-like fashion on semantic grounds while Vocabulary items are arranged on the basis of phonological similarity (a similar assumption is made in psycholinguistic production models).

We therefore predict that adaptation of determiners and/or adjectives to the gender feature of the intruding noun should only be observed following meaning-based substitutions but not following form-based substitutions. The reason for this is that at the point at which form-based substitutions occur (that is, at PF), it is simply too late for adaptation to take place, since feature copy has already been executed. This prediction is in fact borne out. In my corpus, meaning-based noun substitutions are always followed by a process of adaptation (cf. the fully grammatical slips in (17ab)) while form-based substitutions always result in an ungrammatical utterance whenever target and intruding noun are of different gender (cf. the ungrammatical examples given in (17cd); also see Berg 1992; Marx 1999).

- (17) a. aber du musst die **Tür** dann festhalten, Quatsch,
 but you must the.f door(f.) then hold, rubbish,
 das Fenster
 the.n window(n.)
- b. eine überzeugend-e **Niederlage** gegen Portugal
 a.f convincing-f defeat(f.) by Portugal
 ← ein überzeugend-er Sieg
 ← a.m convincing-m victory(m.)
- c. Wer zieht neben Nigeria *ins **Filiale** ein
 who enters besides Nigeria in.the.n branch(f.) PARTICLE
 ← ins Finale
 ← in.the.n. final(n.)
- d. immer *der gleiche **Chaos**, äh, Kasus
 always the.m same chaos(n.), er, case(m.)

I therefore conclude that the mechanisms assumed in the Distributed Morphology framework - feature copy, licensing, phonological readjustment, and morpheme insertion - allow for a straightforward explanation of the spontaneous speech error data I have presented. The theory explains the available data and makes correct predictions about possible and impossible errors. Whenever an error occurs before the level of MS, a grammatical outcome is guaranteed. This, however, is not the case for errors that occur at a later point in the derivation of an utterance.³ What I take to be another welcome result is the fact that no costly repair strategies have to be assumed in order to account for the so-called accommodations, that is for post-error adaptation processes.

³ Errors may not only occur before or after MS, but also at MS. For instance, the feature copy processes that are executed at MS may be defective in that an agreement feature is copied from a wrong NP source. For the most part, such errors occur when another NP with a different feature specification intervenes between the agreement controller and the agreeing element. This is true, for example, for the English slip *the cause of layoffs such as these are not the taxes* ← *the cause of layoffs ... is not the taxes* (Francis 1986:315) in which the verb erroneously agrees with a more local (or proximal) plural NP contained in a PP complement (see Pfau 2000, 2001 for an extensive discussion of local and long-distance agreement errors in language production).

Acknowledgements

I wish to thank Susanne Glück, Katharina Hartmann, Helen Leuninger, and Jochen Zeller for fruitful discussions and comments.

References

- Berg, T. (1987). The case against accommodation: Evidence from German speech error data. *Journal of Memory and Language* 26, pp. 277-299.
- Berg, T. (1988). *Die abbildung des sprachproduktionsprozesses in einem aktivationsflussmodell*. Niemeyer, Tübingen.
- Berg, T. (1992). Prelexical and postlexical features in language production. *Applied Psycholinguistics* 13, pp. 199-235.
- Chomsky, N. (1980). *Rules and representations*. Columbia University Press, New York.
- Corver, N. (1991). Evidence for DegP. *Proceedings of NELS 21*, pp. 33-47.
- Corver, N. (1997). The internal syntax of the Dutch extended adjectival projection. *Natural Language and Linguistic Theory* 15, pp. 289-368.
- Dell, G.S. (1986). A spreading-activation theory of retrieval in sentence production. *Psychological Review* 93, pp. 283-321.
- Francis, W.N. (1986). Proximity concord in English. *Journal of English Linguistics* 19, pp. 309-318.
- Freud, S. (1901/1954). *Zur psychopathologie des alltagslebens*. Fischer, Frankfurt/Main [English translation: *The psychopathology of everyday life*. Penguin, Harmondsworth (1975)].
- Fromkin, V.A. (1971). The non-anomalous nature of anomalous utterances. *Language* 47, pp. 27-52.
- Fromkin, V.A. (1973). Introduction. Fromkin, V.A. (ed.), *Speech errors as linguistic evidence*. Mouton, The Hague, pp. 11-45.
- Garcia-Albea, J.E., S. del Viso & J.M. Igoa (1989). Movement errors and levels of processing in sentence production. *Journal of Psycholinguistic Research* 18, pp. 145-161.
- Garrett, M.F. (1975). The analysis of sentence production. Bower, G. (ed.), *Psychology of learning and motivation, Vol.9*. Academic Press, New York, pp. 133-177.
- Garrett, M.F. (1980a). Levels of processing in sentence production. Butterworth, B. (ed.), *Language production, Vol.1*. Academic Press, London, pp. 177-220.
- Garrett, M.F. (1980b). The limits of accommodation: Arguments for independent processing levels in sentence production. Fromkin, V.A. (ed.), *Errors in linguistic performance. Slips of the tongue, ear, pen, and hand*. Academic Press, New York, pp. 263-271.
- Halle, M. & A. Marantz (1993). Distributed Morphology and the pieces of inflection. Hale, K. & S.J. Keyser (eds.), *The view from building 20*. MIT Press, Cambridge, MA, pp. 111-176.
- Halle, M. & A. Marantz (1994). Some key features of Distributed Morphology. *MIT Working Papers in Linguistics* 21, pp. 275-288.
- Harley, H. & R. Noyer (1998). Licensing the non-lexicalist lexicon: Nominalizations, Vocabulary items and the Encyclopaedia. *MIT Working Papers in Linguistics* 32, pp. 119-137.
- Harley, H. & R. Noyer (1999). Distributed Morphology. *Glott International* 4:4, pp. 3-9.
- Jackendoff, R. (1977). *X'-syntax: A study of phrase structure*. MIT Press: Cambridge, MA.
- Jespersen, O. (1922). *Language: Its nature, development, and origin*. Allen and Unwin, London.
- Katz, J.J. (1964). Mentalism in linguistics. *Language* 40, pp. 124-137.
- Levelt, W.J.M. (1989). *Speaking: From intention to articulation*. MIT Press, Cambridge, MA.
- Marantz, A. (1995). A late note on late insertion. Kim, Y. et al. (eds.), *Explorations in generative grammar*. Hankuk, Seoul, pp. 396-413.
- Marantz, A. (1997). No escape from syntax: Don't try morphological analysis in the privacy of

- your own lexicon. *University of Pennsylvania Working Papers in Linguistics* 4:2, pp. 201-225.
- Marx, E. (1999). Gender processing in speech production: Evidence from German speech errors. *Journal of Psycholinguistic Research* 28, pp. 601-621.
- Pfau, R. (2000), *Features and categories in language production*. Diss, Johann Wolfgang Goethe-Universität, Frankfurt/Main.
- Pfau, R. (2001), Defective feature copy and anti-agreement in language production. Paper presented at *Conference of the Texas Linguistic Society (TLS 2001)*, Austin.
- Ringen, J. (1975). Linguistic facts: A study of the empirical scientific status of transformational generative grammars. Cohen, D. & J. Wirth (eds.), *Testing linguistic hypotheses*. John Wiley, New York, pp. 1-41.
- Stemberger, J.P. (1982). Syntactic errors in speech. *Journal of Psycholinguistic Research* 11, pp. 313-345.
- Sturtevant, E.H. (1917). *Linguistic Change*. University of Chicago Press, Chicago.

Is there ever multiple *wh*-movement?

Evidence from superiority effects and focus in Hungarian

Zoë Toft

One possible descriptive typology for question formation using multiple *wh*-phrases suggests a four-way distinction (Simpson 2000a, b): (1) No *wh*-phrase moves before Spell Out (Chinese) (2) One and only one *wh*-phrase moves before Spell Out (English) (3) Movement of one *wh*-phrase is optional (French) (4) Movement of all *wh*-phrases by Spell Out is obligatory (Russian). This paper contributes to the discussion surrounding the motivation for movement of multiple *wh*-phrases in the latter type of languages, with particular reference to Hungarian, following proposals by Bošković (1997a et seq.) concerning the diagnosis of *wh*-movement (i.e. movement to check *wh*-features) and language typology.

1. Introduction

In trying to answer the question ‘What moves where when in which language and why?’ many linguists have been kept busy over the years. With the growth of generative linguistics and an increasing amount of research into languages other than English, these answers have started to provide very interesting evidence for the debates concerning Universal Grammar and language typology: to what extent is there universal patterning in the formation of *wh*-questions? Can the same formal mechanisms account for the variation that does exist?

Cross-linguistically, a four-way typology can be posited for *wh*-movement. In Chinese-type languages *wh*-elements appear to remain in situ at Spell Out:

- | | | | | | |
|-----|-------------------------------|------|------|---------|-------------------|
| (1) | John | gei | shei | shenme? | Chinese |
| | John | give | who | what | Bošković (1999:2) |
| | ‘What did John give to whom?’ | | | | |

In English-type languages normally one and only one *wh*-element is fronted before Spell Out:

- (2) 'When
- _i
- did he do what t
- _i
- ?'

In a third, less clearly understood set of languages there is some optional *wh*-movement. French, Indonesian and Iraqi Arabic may be described as belonging to this group (data from Bošković 1999:2-3):

- (3) a. Qu' a-t-il donné à qui? } *Wh*-movement is optional in
 what has-he given to whom } short distance null C matrix
 'What did he give to whom?' } questions
- b. Il a donné quoi à qui? } *Wh*-movement is
 he has given what to whom } compulsory in
 'What did he give to whom?' } embedded
- c. Pierre a demandé qui tu as embrassé } questions (as it also
 Pierre has asked who you have kissed } is in long distance
 'Pierre asked who you kissed' } matrix questions
- d. *Pierre a demandé tu as embrassé qui } and overt questions
 Pierre has asked you have kissed who } for those dialects
 *'Pierre asked you kissed who' } which have overt C
 questions)

While descriptively it is fair to say that these languages exhibit optional *wh*-movement in some circumstances, further research may show that the languages in this set actually belong to one of the first two sets.¹ However, for the purposes of this paper I assume, in line with Bošković, that they form a third, distinct group. Finally there is a set of languages in which fronting of all *wh*-elements is obligatory by Spell Out:

- (4) a. Cine cu ce merge? } Romanian
 who with what goes } Rudin (1988:449)
 'Who goes by what?' (i.e. means of transportation)
- b. vin ra tkva? } Georgian
 who what said
 'Who said what?'
- c. Ki mikor született? } Hungarian
 who when was-born
 'Who was born when?'

Although most research into this set of languages has so far concentrated on Slavic languages, the examples above show that the phenomenon of multiple *wh*-fronting is also found in Romance, Caucasian and Uralic languages.

¹ Indeed, Cheng (1991) predicts that there should be no languages in which *wh*-movement is purely optional.

2. *Bošković (1999)*

Bošković initially recognises the four basic types of language with respect to question formation using multiple *wh*-phrases as outlined above. Crucially he makes a distinction between *wh*-‘movement’, which is driven only by the need to check *wh*-features, and *wh*-‘fronting’, which is driven by the need to check non *wh*-features, typically focus features.² Although the results of these two operations may appear similar on the surface, Bošković proposes that the two different mechanisms can be identified by examining Superiority effects. With this distinction established he goes on to argue that the language type ‘multiple *wh*-‘movement’ languages’ (to which Polish, Serbo-Croatian, Bulgarian as well as Romanian, Russian, Georgian and Hungarian are traditionally assigned) be eliminated from the cross linguistic typology. Following work begun by Rudin (1988), who argued that multiple *wh*-transformation³ languages (henceforth MWT languages) do not form a single cohesive set, Bošković argues that MWT languages pattern in three different ways, based on differences in the contexts where Superiority effects are exhibited. He asserts that this three-way distinction in MWT languages corresponds to the three-way distinction in non-MWT languages and that MWT, as a unitary phenomenon and language type, should therefore no longer be recognised. According to Bošković, Russian mirrors Chinese, Serbo-Croatian twins up with French, while Bulgarian reveals itself to pattern like English. Where Russian, Serbo-Croatian and Bulgarian differ from Chinese, French and English is that in the former group of languages, *wh*-phrases which do not undergo genuine *wh*-movement must nevertheless be fronted, but for independent reasons.

Bošković presents his paper in the minimalist framework of Chomsky (1995), under which movement is subject to derivational economy. Movement is caused by the need to check features and must be as economical as possible. Thus, if there is more than one feature to be targeted, the attractor picks that which is higher in the tree in order to assure that, of all the possible movements, the chosen movement is the shortest (and thus most economical) movement.

At the heart of Bošković’s analysis is his assumption that Superiority effects can be used to diagnose *wh*-movement (1999:7). He argues that only when there are Superiority effects is there *wh*-movement, which he defines as movement driven by the need to check the strong +*wh*-feature, wherever that be located. Superiority effects are reflected in the order of fronted *wh*-phrases: According to the Superiority condition, if a rule has two potential targets in a sentence the rule must apply to that which is structurally superior on grounds of

² Henceforth I shall use *wh*-movement and *wh*-fronting as defined here. I shall also use the term *wh*-transformation as a cover term, when the exact status of the transformation, i.e. whether due to *wh*-checking requirements or focus feature checking requirements, is as yet undetermined or not relevant to the point at hand.

³ The term used by Rudin is actually ‘*wh*-fronting’. However, her usage of this term is not the same as that of Bošković’s and thus, to avoid confusion, I use the cover term *wh*-transformation.

economy of derivation. This principle is said to account for the standard Superiority facts from English, as illustrated in (5)):

- (5) a. Who saw what?
 SS: $[_{CP} \text{ who}_i [_{IP} t_i \text{ saw what}]]$
 LF: $[_{CP} [\text{what}]_m [\text{who}]_i [_{IP} t_i \text{ saw } t_m]]$
- b. *What did who see?
 SS: $*[_{CP} \text{ what}_m \text{ did } [_{IP} \text{ who see } t_m]]$
 LF: $*[_{CP} [\text{who}]_i [\text{what}]_m \text{ did } [_{IP} t_i \text{ see } t_m]]$

Bošković shows that Russian never has Superiority effects, Bulgarian always has Superiority effects and Serbo-Croatian has Superiority effects in exactly those contexts where French has obligatory *wh*-movement, namely in long distance and embedded questions, but not in matrix questions. Thus, given that Superiority effects occur when *wh*-movement takes place, Bošković makes the bold claim that Russian is like Chinese, in that no *wh*-movement takes place, Bulgarian is like English, in that *wh*-movement always takes place, whilst Serbo-Croatian patterns like French in that *wh*-movement is obligatory only in certain circumstances.

Bošković adopts a proposal made by Stjepanovic (1998) to explain why in MWT languages *wh*-phrases, even when they are not moving to satisfy *wh*-feature checking requirements, must still undergo raising: *wh*-phrases are inherently contrastively focused and thus are forced to undergo overt focus movement. (Although Bošković does not provide a definition of ‘focus’, his usage of the term seems compatible with the proposal made by Zubizarreta (1998), where, following Chomsky (1976) ‘the focus of a sentence is analysed as a definite quantifier’ (Zubizarreta 1998:3)). Evidence that multiple fronting of *wh*-phrases is independent of *wh*-movement comes from the fact that in the three languages examined by Bošković, *wh*-phrases must be fronted even in echo questions, where, it is traditionally assumed, no *wh*-movement takes place. Evidence that the multiple fronting of *wh*-phrases is driven by focus requirements paradoxically comes from instances where, in MWT languages, there are apparent exceptions to the obligatory raising of all *wh*-phrases.

In each of the three languages examined by Bošković D(iscourse)-linked *wh*-phrases can remain in situ. Following Pesetsky (1987) a *wh*-phrase is said to be D-linked when the set from which answer-values for the *wh*-phrase in question is finite and assumed to be known to both speaker and hearer. Because the set of answers is limited, D-linked *wh*-phrases are not quantifiers and therefore do not need to undergo movement to an operator position as other quantificational elements (e.g. standard *wh*-phrases, focus-phrases) do. That D-linked *wh*-phrases can remain in situ might therefore be elegantly explained under a focus analysis of *wh*-fronting in MWT languages. The range of reference for D-linked *wh*-phrases is limited to a set of objects assumed to be familiar to both speaker and hearer and thus D-linked *wh*-phrases are not inherently focused (something is already known about them). If D-linked *wh*-

phrases are not inherently focused, they will not be subject to focus movement and may therefore remain in situ.

Crucially, *wh*-fronting driven by focus checking requirements will not show Superiority effects. *Wh*-phrases themselves, rather than the X^0 element into whose Spec position they move, are argued to have a strong focus feature, and this may be checked in any order without violating the principle of economy, as movement by either the higher *wh*-phrase, or the lower *wh*-phrase results in the same number of full nodes being crossed.

In the following section I present facts concerning multiple *wh*-transformations in Hungarian. Having presented the facts, in section 4 I explore whether either *wh*-movement or *wh*-fronting occur in Hungarian and examine what consequences the Hungarian data has for the proposals made by Bošković concerning Superiority effects with regard to the diagnosis of *wh*-movement, and the elimination of multiple *wh*-movement as a language type.

3. Hungarian data

3.1 Single Clauses

Hungarian is most often described as a discourse configurational language: topic and focus are argued to have clearly identified structural positions (e.g. Kiss 1987, 1995). *Wh*-phrases are found immediately preceding the verb (cf. 6a, b below) in a position generally identified with focus and the only exception to the adjacency of the *wh*-phrase and the verb is in case of negation, when the negative particle must intervene (6b, c, d). Whatever the (final) landing site of *wh*-phrases (previous analyses have suggested Spec VP (Kiss 1995), Spec FP, where the Focus Phrase has its own projection (Brody 1990) and adjoined to IP (Richards 1999)), it is clearly not Spec CP, as *wh*-phrases always follow any overt complementizer (6e, f). It should also be noted that the topic position precedes the focus position.

- | | |
|---|---|
| (6) a. Ki látta az ikreket?
who saw the twins-ACC ⁴
'Who saw the twins?' | b. *Ki az ikreket látta?
who the twins-ACC saw
Attempted: 'Who saw the twins?' |
| c. Ki nem látta az ikreket?
who not saw the twins-ACC
'Who didn't see the twins?' | d. *Nem ki látta az ikreket?
not who saw the twins-ACC
Attempted: 'Who didn't see the twins?' |

⁴ I use the following abbreviations throughout this paper: 1PP: First person plural, 1PS: First person singular, ACC: Accusative, COMP: Complementizer, CV: Co-verb, DAT: Dative, DEF: Definite marker, i.e. the so-called second conjugation marker, INDEF: Indefinite marker, i.e. the so-called first conjugation marker, SUBJ: Subjunctive.

- (6) e. Hogy ki látta az ikreket, arra voltam kíváncsi.
 COMP who saw the twins-ACC, that-about was-I curious
 ‘What I was curious about was who saw the twins’
 f. *Ki hogy látta az ikreket, arra voltam kíváncsi.
 who COMP saw the twins-ACC, that-about was-I curious

In multiple *wh*-questions *all wh*-phrases are found preverbally, as the following examples show:

- (7) a. Pillanatról pillanatra követhető, ki, mikor, milyen
 moment-from moment-to observable, who, when, which
 helyzetben hogyan érez.
 situation-in how feels
 ‘It is observable from moment to moment who feels how, when and in
 which situation.’⁵
 b. Itt tisztázzuk, hogy kit, mikor, miért, hogyan
 here clarify-SUBJ-1PP, that who-ACC, when, what-for, how
 kárpótolunk.
 compensate
 ‘Let us clarify here, how we are to compensate who, when and for
 what.’

The key fact of multiple *wh*-questions in Hungarian is that, in general, there are no ordering restrictions on *wh*-phrases:⁶

- (8) a. Ki kivel jár? b. Kivel ki jár?
 who who-with goes who-with who goes
 ‘Who is going out with whom?’ ‘Who is going out with whom?’
 c. Mi mit jelent? d. Mit mi jelent?
 what what-ACC means what-ACC what means
 ‘What means what?’ ‘What means what?’

⁵ Examples (7) and (8) are taken from a corpus of Hungarian that may be found at www.corpus.nyud.hu/mnsz. 7: G. László Szabó (1996.06.28, nszb 3411), 8: Pál Tóth (1995.09.11, ogy. 29725). This corpus contains several hundred examples of multiple *wh*-transformations, from both the written and the spoken language. Also note, the use of commas to separate *wh*-phrases is generally considered to be optional and not indicative of any structural feature (K. Berces, T. Váradi p.c.)

⁶ As is also the case in Russian (Stepanov 1998:458) Hungarian does show some word order restrictions in cases where *wh*-phrases are not identical in animacy:

Ki mit lát? ??Mit ki lát?
 who what-ACC sees what-ACC who sees
 ‘Who sees what?’

While Stepanov suggests such restrictions, in Russian at least, might be due to a phonological constraint, I suggest that the restrictions may be related to saliency and an animacy hierarchy along the lines of Comrie (1981).

- e. Mikor hova utazik? f. Hova mikor utazik?
 when whither travels whither when travels
 ‘When does he travel where?’ ‘When does he travel where?’

3.2 Echo Questions

Hungarian grammars state that in echo questions, all question words are placed pre-verbally, and that they are distinguished from genuine multiple *wh*-questions either by a change in intonation pattern (the intonation for simple echo questions is the same as that for yes-no questions, while in multiple *wh*-echo questions each question word is equally stressed) or through the optional introduction of the complementizer *hogy* ‘that’ (Kenesei, Vago and Fenyvesi, henceforth KVF 1998:13-15):

- (9) a. *Single wh-echo question*
 (Hogy) Anna mit talált meg?
 (that) Anna what-ACC found CV
 Anna found what?
 b. *Multiple wh-echo question*
 (Hogy) ki mit mikor talált meg?
 (that) who what-ACC when found CV
 ‘Who found what when?’

If we accept the traditional analysis that *wh*-movement does not occur in echo-questions (in many languages *wh*-phrases are found in situ, i.e. post verbally in echo questions, despite obligatory raising of *wh*-phrases in genuine, i.e. non-echo, questions), the obligatory fronting of *wh*-phrases in Hungarian may be interpreted as taking place for reasons other than the checking of *wh*-features.

3.3 Multiple Clauses

Thus far I have devoted attention only to *wh*-transformations in single clauses. In many languages, however, *wh*-phrases may move out of the CP within which they originate (Lasnik & Saito 1984, Rizzi 1990, Cinque 1990):

- (10) [_{CP}Who_i do they believe[_{CP} t_i won the prize]]?

In this sub-section I address two questions: (1) Does Hungarian have long distance *wh*-transformations and if so (2) Are there any subject/object asymmetries (Superiority effects) associated with such movement. The answers to these questions are (1) yes, Hungarian does have long distance *wh*-transformations and (2) no – there are no subject/object asymmetries, in as

much as subjects, objects and adverbials may each be raised:

- (11) a. *Subject wh-phrase moves out of lower CP*
 Kit_i gondolsz, hogy Vili mondta, hogy t_i
 who-ACC⁷ think-2PS/INDEF that Vili said-3PS/DEF that
 látta Jánost?
 saw-3PS/DEF János-ACC
 ‘Who do you think that Vili said that saw John?’
- b. *Object wh-phrase moves out of lower CP*
 A tanár mit_i akar, hogy tanuljunk t_i?
 the teacher what-ACC wants, that study-SUBJ-1PP
 ‘What does the teacher want us to study?’
- c. *Adverbial wh-phrase moves out of lower CP*
 János mikor_i akarja, hogy induljunk t_i?
 János when want-DEF that leave-SUBJ-1PP
 ‘When does János want us to leave?’

In multiple *wh*-questions formation an alternative strategy, utilizing ‘partial’ *wh*-movement (see É Kiss 1987, Horvath 1995 and McDaniel 1989) is also available. However, an analysis of this phenomenon is beyond the scope of this paper.

Whilst more research remains to be done into long distance movement in multiple *wh*-questions, what is clear is that there are no Superiority effects in long distance movement of Hungarian *wh*-phrases (as is also concluded by É Kiss 1987), just as there are no Superiority effects in short distance movement.

3.4 Hungarian *in situ wh*-phrases

Although it is clear that Hungarian is a MWT language, there are certain circumstances in which it is possible to leave *wh*-phrases *in situ*:

- (12) *Possibility of leaving either wh-phrase in situ*
- | | |
|--------------------------------|--------------------------------|
| a. Ki jár kivel? | b. Kivel jár ki? |
| who goes who-with | who-with goes who |
| Who is going out with who? | Who is going out with who? |
| c. Meddig dolgozik hol? | d. Hol dolgozik meddig? |
| for-how-long works where | where works for-how-long |
| ‘How long does he work where?’ | ‘How long does he work where?’ |

⁷ One interesting problem in raising *wh*-phrases into higher clauses is that associated with case assignment. As this example shows, the subject *wh*-phrase is assigned Accusative case (-t). For discussion of this phenomenon and possible explanations see de Mey & Marác (1986) and É Kiss (1987).

- (13) *Impossibility of leaving all wh-phrases in situ*
- | | |
|--------------------------------|--------------------------------|
| a. *Jár ki kivel | b. *Jár kivel ki |
| goes who who-with | goes who-with who |
| Attempt at: | Attempt at: |
| ‘Who is going out with who?’ | ‘Who is going out with who?’ |
| c. *Dolgozik meddig hol? | d. *Dolgozik hol meddig? |
| works for-how-long where | works where for-how-long |
| ‘How long does he work where?’ | ‘How long does he work where?’ |

These examples show us that although there are no restrictions on which *wh*-phrase raises and which remains in situ, it is always obligatory for at least one *wh*-phrase to raise. We now need to establish what the circumstances are under which it is possible to leave a *wh*-phrase in situ. What we discover is that if the domain of reference of the multiple questions is somehow limited, e.g. to the actants in the discourse, events or characters in a novel, then it is possible to leave one (or more) of the *wh*-phrases in situ, as long as one (or more) *wh*-phrase has been raised to a pre-verbal position (KVF 1998:9) (cf. 14, 15 below). If, on the other hand, the domain of reference of the *wh*-phrases is entirely unlimited, all *wh*-phrases are raised (see 16, 17 below).

If the domain of reference is somehow limited, it is easy to argue that we are dealing with a case of D-linking. Recall that the range of reference for a D-linked *wh*-phrase is limited to a set of objects assumed to be familiar to both speaker and hearer. As such, D-linked *wh*-phrases are not inherently focused because we know something about them. Recall too how Bošković showed that D-linked *wh*-phrases in Serbo-Croatian, Bulgarian and Russian may be left in situ. He argues that this is because (at least some) *wh*-fronting is actually driven by the need to check focus features, and thus when a *wh*-phrase is not inherently focused (e.g. because it is D-linked) it does not need to move. What is now exciting is that we appear to have found a parallel situation in Hungarian:

(14) *D-linking: Domain of reference of wh-phrases is limited (1)*

Scenario: We know that there are 10 people at a party and that each person is going out with one other person who is at the party. How do you ask who is going out with whom?:

- | | | |
|-------------------------------|-------------------|-------------------|
| a. ✓Ki jár kivel? | b. ?Ki kivel jár? | c. *Jár ki kivel? |
| who goes who-with | who who-with goes | goes who who-with |
| ‘Who is going out with whom?’ | | |

(15) *D-linking: Domain of reference of wh-phrases is limited (2)*

- | |
|---|
| a. ✓Mária kérdezte, melyik diák olvasta melyik könyvet. |
| Mária asked which student read which book-ACC |
| ‘Mária asked which student read which book.’ |
| b. ?Mária kérdezte, melyik diák melyik könyvet olvasta. |
| Mária asked which student which book-ACC read |

- c. *Mária kérdezte, olvasta melyik diák melyik könyvet.
 Maria asked read which student which book-ACC

In (14a) and (15a) only one *wh*-phrase raises and the sentences are grammatical. In (14b) and (15b) both *wh*-phrases are raised and the sentences are degraded. In (14c) and (15c) no *wh*-phrase is raised and the sentences are entirely ungrammatical.

(16) *No D-linking: Domain of reference of wh-phrases is unlimited (1)*

Scenario: A fairy appears and says to everyone ‘You can have whatever you wish for – everyone everywhere is allowed whatever they want’. How does the fairy ask ‘Who wants what?’:

- a. ✓Ki mit akar? b. *Ki akar mit? c. *Akar ki mit?
 who what-ACC wants who wants what-ACC wants who what-ACC
 ‘Who wants what?’

(17) *No D-linking: Domain of reference of wh-phrases is unlimited⁸ (2)*

- a. ✓Mária kérdezte, ki mit olvasott.
 Mária asked who what-ACC read
 ‘Mária asked who read what’
 b. ? Mária kérdezte, ki olvasott mit.
 Mária asked who read what
 c. *Mária kérdezte, olvasott ki mit.
 Mária asked, read who what-ACC

In (16a) and (17a) both *wh*-phrases raise to generate a grammatical sentence. In (16b) and (17b) only one *wh*-phrase raises and the sentences are degraded. In (16c) and (17c) neither *wh*-phrase raises and the sentences are ungrammatical.

4. *Analysis of the Hungarian Data and appraisal of Bošković (1999)*

In (8) above we saw that Hungarian displays no Superiority effects in short distance matrix questions; all *wh*-sequences, such as subject / direct object, subject / indirect object or direct object / indirect object can be freely ordered. Although we might surmise from this that no *wh*-movement takes place in Hungarian, it would be premature to draw such a conclusion at this point. Bošković (1999) shows that Serbo-Croatian, whilst exhibiting no Superiority effects in matrix questions, does display strict ordering of *wh*-phrases in cases of long distance movement. With this in mind let us recall the Hungarian data with regard to long distance movement in (11) above. Here we saw that there are no subject-object asymmetries associated with long distance movement in

⁸ Bare *wh*-phrases are generally interpreted as *not* D-linked, especially when no setting is given (Simpson 2000a, Pesetsky 1987).

Hungarian. We are now safely able to conclude that Hungarian does indeed exhibit no Superiority effects in the formation of multiple *wh*-questions.

In §2 we saw Bošković's proposal that Superiority effects are indicative of *wh*-movement. Given that there are no Superiority effects in Hungarian, we are therefore led to conclude that there is no *wh*-movement in Hungarian. However, *wh*-phrases in Hungarian do clearly occur in a preverbal position (presumably as a result of a transformation). If this transformation is not the result of *wh*-movement, what is it the result of?

Evidence from D-linked *wh*-phrases suggests an answer: *wh*-phrases are inherently marked for focus, and therefore, under normal conditions, they are subject to focus movement. D-linked *wh*-phrases, however, are inherently *un*marked for focus (as something is already known about them) and therefore they may remain in situ (cf 14, 15 above). It is this behaviour that can be argued to provide us with evidence that in Hungarian, at least some *wh*-transformations are not driven by the need to check *wh*-features but rather by the need to check focus features. (Here we can also recall that all analyses of Hungarian *wh*-transformations agree that *wh*-phrases move to structural position identified with focus). To re-phrase this conclusion: we can explain some important exceptions to the multiple transformations of *wh*-phrases in Hungarian if we adopt Bošković's proposal that not all *wh*-transformations should be regarded as being driven by *wh*-feature checking requirements.

Thus far we have seen that Hungarian exhibits no Superiority effects and that it is focus feature checking requirements that drive at least some of the *wh*-transformations in this language. Our next question is therefore 'Are *all wh*-transformations in Hungarian driven by the need to check focus features?'

If we examine the data in (14) and (15) again we see that even though both *wh*-phrases in each example are D-linked, one of the *wh*-phrases must still raise to a pre-verbal position. Yet, if all *wh*-transformations in Hungarian are driven by the need to check focus features we would not expect this behaviour: D-linked *wh*-phrases, such as those in (14) and (15) should not be subject to focus movement. The fact is, however, that in all circumstances, one *wh*-phrase must raise, even when D-linked. This suggests that the interrogative Q feature is strong and must therefore be checked in the overt syntax. In other words it suggests that there *is wh*-movement in Hungarian.

Following this line of argument we are led to believe that Hungarian has both *wh*-movement and *wh*-fronting (as defined in §2). Recall, however, that Hungarian exhibits no Superiority effects even though Bošković argues the Superiority effects should be exhibited if there is *wh*-movement. Thus the Hungarian data would seem to seriously challenge Bošković's proposals. In spite of this, before we abandon his interesting ideas let us see if we might find some explanation for the lack of Superiority effects in Hungarian.

My first proposal invokes the notion of non-configurationality. Some linguists, notably Kiss (1987) have ascribed to Hungarian a flat structure below the VP. Whilst this proposal is certainly not without its opponents, the lack of hierarchy below the VP would account very neatly for the lack of Superiority

effects; subject, object and adjunct would all be base generated at the same level and thus movement of one rather than another would be neither more nor less economical. A lack of Superiority effects would therefore be predicted. Whilst I believe this proposal to be interesting, there remains a question as to whether Bošković's proposals, which do not make any reference to the configurational / non-configurational distinction, can be extended so straightforwardly to non-configurational languages.⁹

A second proposal, that would allow us to maintain the assumption that Hungarian phrase structure is hierarchical (i.e. that the language is configurational), would be to adopt a suggestion made by Baker (1996) for the topicalization and left dislocation of DPs in polysynthetic languages. He suggests that the topicalized/left dislocated DPs are directly inserted into their higher positions (i.e. no movement takes place) and they are co-indexed with pro elements found in the post-verbal DPs. If we extend his proposal to cover *wh*-phrases, the lack of movement would explain the lack of Superiority effects. Although this is a radical proposal it may be the case that such an analysis could work for Hungarian, given that direct insertion of *wh*-phrases into the higher clause of two clause structures has already been suggested (de Mey and Marácz 1986). If direct insertion is possible in multi-clause structures, it may also be possible in single clause structures. Once again, however, this proposal is problematic: in adopting Baker's approach we assume no *wh*-transformations at all and thereby we are forced to abandon the set of premises on which this paper is based.

Given that I cannot explain the lack of Superiority effects without adopting an approach which entails modification if not rejection of Bošković's insights, let me instead re-examine the premise that there is *wh*-movement in Hungarian.

I proposed that there must be some *wh*-movement in Hungarian in order to explain why at least one *wh*-phrase must raise to a pre-verbal position even when it is D-linked. Given that D-linked *wh*-phrases do not need to move in order to check any focus features, we might expect that all such *wh*-phrases could remain in a post verbal position. This, however, is not possible, as was seen above in (14) and (15). Given a focus driven theory of movement we predict that transformation of either *wh*-phrase should be unnecessary (neither need to move to check focus requirements). Nevertheless one of the *wh*-phrases does move, and to account for this I proposed that *wh*-movement does indeed take place. Now we need to check whether there is not some alternative explanation for this transformation, which would allow us to re-assert the hypothesis that there is no *wh*-movement in Hungarian as expected on account of the lack of Superiority effects.

Upon re-examination of the Russian data in Bošković (1999) we find exactly the same patterning of data for Russian as we have seen for Hungarian. Crucially Bošković argues that (i) no *wh*-movement takes place in Russian on

⁹ It is interesting to note that, just as for Hungarian, one could argue that Russian is a non-configurational language. Bošković, however, makes no mention of this.

account of the lack of Superiority effects and (ii) D-linked *wh*-phrases may remain in situ. However, his data actually suggest that the latter assertion is not always true:

- (18) *One wh-phrase, even though D-linked, raises to a preverbal position*
 (?) *Kakoj student pročital kakuju knigu?* (Russian)
 which student read which book
 ‘Which student read which book?’ (Bošković 1999:9)

This data is exactly parallel to the Hungarian data in (15). Whether deliberately or not, Bošković makes no comment on the raising of *kakoj student* ‘which student’. However later on in his paper he does write (Bošković 1999:11):

‘A question arises as to whether a D-linked *wh*-phrase can remain in situ in single questions. This is not completely clear in Serbo-Croatian [...] ?? On je kupio koju knjigu?
 he is bought which book
 ‘He bought which book?’

I assume that the degraded status of the construction [...] is a result of the failure to type the clause as a question in the sense of Cheng (1991, 1997) [...] Since, according to Cheng, Serbo-Croatian does not have a pure question particle [...] one of the Serbo-Croatian *wh*-phrases must be fronted in true questions for clausal typing purposes, which I assume is carried out by simply fronting a *wh*-phrase within the highest projection in overt syntax. [...] I leave open here how this fronting is instantiated in D-linking questions. It could be instantiated as either scrambling or *wh*-movement’

A reader might infer from this that the initial *wh*-phrase in (14) and (15) has similarly been raised in order to satisfy typing requirements. However, whether there is a genuine distinction, i.e. one of substance, between clausal typing and *wh*-movement is far from clear. If the only difference is a terminological one, we may be forced to accept that even though D-linked *wh*-phrases are not inherently focused, they nevertheless undergo *wh*-movement. If we deduce from this that Russian does have *wh*-movement, Bošković’s proposal that Russian is actually like Chinese (in that no *wh*-movement takes place) becomes untenable, and his 3-way typology starts to crumble.

5. Conclusions

In this paper I have investigated the nature of *wh*-movement in Hungarian with particular regard to proposals made by Bošković concerning language typology, the diagnosis of *wh*-movement and phenomena related to focus.

Whilst Bošković makes some very interesting proposals, this paper shows two areas in need of further research: the diagnosis of *wh*-movement in non-configurational languages and the unpredicted compulsory movement of D-linked *wh*-phrases.

First we saw that in Hungarian, in general, all *wh*-phrases are raised to a pre-verbal position. Then we saw that there are no ordering restrictions on *wh*-phrases in Hungarian which we understood to be indicative of the lack of Superiority effects in Hungarian. Following Bošković we assumed that *wh*-movement, driven by the need to check *wh*-features, does show Superiority effects, whilst *wh*-fronting, driven by the need to check focus features, does not. Given the facts that in Hungarian it is always necessary to raise at least one *wh*-phrase even when that *wh*-phrase is D-linked, and that there are no ordering restrictions on the raised *wh*-phrases, we reached a situation which challenged Bošković's proposals. Either we followed a route whereby we accepted that *wh*-movement did occur even though there were no Superiority effects, or we took a different route which led to difficulties in explaining why D-linked *wh*-phrases should ever undergo movement. Thus we reach two challenging conclusions: (i) Superiority may not be a diagnostic for *wh*-movement and (ii) it may be possible (at least in some languages) that *wh*-constructions arise without movement. The issues of non-configurationality interfacing with *wh*-movement and a non derivational approach to *wh* constructions are both interesting topics for future research.

Acknowledgements

I am particularly grateful to my 11 informants in Budapest. Special thanks also go to Peter Sherwood, Andrew Simpson and participants at ConSOLE 9. Needless to say, all errors and omissions remain my own. An earlier version of this paper appears in Durham Working Papers in Linguistics Volume 7. This work was supported by grant no. SSS/10484396 from the Student Awards Agency for Scotland.

References

- Baker, M. (1996). *The polysynthesis parameter*. Oxford University Press, Oxford.
- Bošković, Z. (1997a). Fronting *wh*-phrases in Serbo-Croatian. Lindseth, M. & S. Franks (eds.), *Formal approaches to Slavic linguistics: the Indiana meeting, 1996*. Michigan Slavic Publications, Ann Arbor.
- Bošković, Z. (1997b). Superiority effects with multiple *wh*-fronting in Serbo-Croatian. *Lingua* 102, pp. 1-20.
- Bošković, Z. (1998). Multiple *wh*-fronting and economy of derivation. *Proceedings of the West Coast Conference on Formal Linguistics* 16, pp. 49-63.
- Bošković, Z. (1999). What is special about multiple *wh*-fronting? Ms, University of Connecticut.
- Brody, M. (1990). Some remarks on the Focus field in Hungarian. *UCL Working Papers in Linguistics and Phonetics* 2, pp. 201-225.

- Cinque, G. (1990) *Types of A'-dependencies*. (Linguistic Inquiry Monographs 7). MIT Press, Cambridge, MA.
- Comrie, B. (1981). *Language universals and linguistic typology*. Blackwell, Oxford.
- Cheng, L. (1991). *On the typology of wh-questions*. Diss, MIT, Cambridge, MA.
- Chomsky, N. (1976). Conditions on rules of grammar. *Linguistic Analysis* 2, pp. 303-351.
- Chomsky, N. (1995). *The minimalist program*. MIT Press, Cambridge, MA.
- De Mey, S. & Marác, L. (1986). On question sentences in Hungarian. Abraham, W. & S. de Mey (eds.), *Topic, focus and configurationality*. John Benjamins, Amsterdam and Philadelphia, pp. 253-276.
- Horvath, J. (1995). Partial Wh-movement and wh 'scope-markers'. Kenesei, I. (ed.), *Levels and structure*. (Approaches to Hungarian, Vol. 5). JATE, Szeged, pp. 89-124.
- Kenesei, I., R. Vago & A. Fenyvesi (1998). *Hungarian*. Routledge, London and New York.
- Kiefer, F. & É Kiss, K. (1994) (eds.). *The syntactic structure of Hungarian*. Academic Press, San Diego.
- Kiss, K. (1981). Structural relations in Hungarian, a 'free' word order language. *Linguistic Inquiry* 12, pp. 185-213.
- Kiss, K. (1987). *Configurationality in Hungarian*. D. Reidel Publishing Company, Dordrecht, Boston, Lancaster, Tokyo.
- Kiss, K. (1995) (ed.). *Discourse configurational languages*. Oxford University Press, New York and Oxford.
- Kiss, K., F. Kiefer & P. Siptár, P. (1998). *Új magyar nyelvtan*. Osiris Kiadó, Budapest.
- Lasnik, R. & M. Saito (1984). On the nature of Proper Government. *Linguistic Inquiry* 14, pp. 253-289.
- McDaniel, D. (1989). Partial and multiple wh-movement. *Natural Language and Linguistic Theory* 7, pp. 565-604.
- Pesetsky, D. (1987). Wh-in situ: Movement and unselective binding. Reuland, E. & A. ter Meulen (eds.), *The representation of (in)definiteness*. MIT Press, Cambridge, MA., pp. 98-129.
- Richards, N. (1997). *What moves where when in which language?* Diss, MIT, Cambridge, MA.
- Rizzi, L. (1990). *Relativized minimality*. MIT Press, Cambridge, MA.
- Rudin, C. (1988). On multiple questions and multiple wh-fronting. *Natural Language and Linguistic Theory* 6, pp. 445-501.
- Simpson, A. (2000a). Advanced Syntax (course notes). SOAS.
- Simpson, A. (2000b). *Wh movement and the theory of feature checking*. John Benjamins, Amsterdam.
- Stepanov, A. (1998). On Wh-fronting in Russian. *NELS* 28, pp. 453-467.
- Stjepanovic, S. (1998). Short-distance movement of wh-phrases in Serbo-Croatian matrix clauses. Paper presented at the Comparative Slavic Morphosyntax workshop, Indiana University.
- Zolnay, Gy. (1926). *Mondatátészöv.Ádés*. Magyar Tudományos Akadémia, Budapest.
- Zubizarreta, M. (1998). *Prosody, focus and word order*. MIT Press, Cambridge, MA.

The asymmetry of Dutch weak pronouns

Marlies van der Velde

The purpose of this paper is to show that existing analyses of Dutch (object) pronouns should at least be refined. Dutch has two series of pronouns: a series of full forms (strong pronouns) and a series of reduced forms. The status of these reduced forms is the subject of some debate. Indeed, the reduced (object) forms are analyzed as clitics (Zwart 1993, 1996 among others) and as weak pronouns (Cardinaletti & Starke 1996). The data in this paper suggest an asymmetry between the reduced object forms, while the cited authors take the reduced (object) forms to constitute a homogeneous class.

1. Introduction

In this paper new data about the distribution of weak object pronouns in Dutch will be presented. These data will suggest that the actual existing analyses for Dutch object pronouns should at least be refined. Dutch has two series of pronouns, a series of full forms and a series of reduced forms. Full forms are analyzed as strong pronouns and they will not be discussed in this paper. The status of the reduced forms is the subject of some debate.

Roughly speaking there are two types of possible analyses. First an analysis according to which the Dutch reduced forms are clitics. This analysis is developed by Zwart (1993, 1996) among others. And second, an analysis according to which the Dutch reduced forms are weak pronouns. This analysis is supported by Cardinaletti & Starke (1996, 2000) among others.

For Zwart (op. cit.) clitics are syntactic heads. In his view clitics are pronominal elements that show a syntactic distribution different from full DPs. Since the reduced forms in Dutch behave differently than full DPs, Zwart claims that they are clitics. For Cardinaletti & Starke (op. cit.) weak pronouns are phonologically deficient elements (in that they cannot be isolated, modified and coordinated etc.); they are maximal projections from the point of view of X-bar theory.

In this paper I would like to suggest that an analysis of Dutch object pronouns must be different from the two types just mentioned. In particular the

claim will be made that reduced forms do not constitute a homogenous class. Although the reduced forms are all phonologically deficient pronouns, a distinction within these pronouns, more particularly a distinction between reduced non-neuter forms and the reduced neuter form, will be made. This idea will be based on facts related to the distribution of reduced forms in Exceptional Case Marking constructions, Double Object Constructions and Prepositional Phrases.

This paper is organized as follows: in the next section the paradigm of the object pronouns in Dutch will be presented. The distribution of the reduced object forms and DPs in the constructions just mentioned will be discussed in sections 3 through 5. In the discussion, I will explain why I have the opinion that existing analyses of Dutch pronouns should at least be refined (section 6).

2. Dutch pronouns

Dutch has two series of object pronouns: a series of full forms and a series of reduced forms. These forms are presented in table I. Observe that the first and second person plural pronouns *ons* and *jullie* do not have a reduced counterpart. Furthermore the third person singular neuter pronoun *'t* does not have a full form counterpart. Given that *het* like the other reduced forms is phonologically deficient, it must be considered as a reduced form.¹

Table I: Dutch object pronouns²

	full form	reduced form
1sg	mij	me
2sg	jou	je
3sg-m	hem	'm
3sg-f	haar	'r (ze; d'r)
3sg-n		het; 't
1pl	ons	
2pl	jullie	
3pl	hun;hen	ze

In this paper the third person reduced forms: *'r*, *'m* and *'t* will be examined in more detail. *'r* is the reduced feminine form, *'m* is the reduced masculine form and *'t* is the reduced neuter form.

With respect to their use, the following points should be underlined. First, as already stated, these reduced forms are phonologically deficient. This means

¹ A reviewer suggested that the demonstrative form *dat* 'that' may be the corresponding full form. Given the fact that I do not consider full forms here, I leave this idea aside.

² Although in (traditionnal) grammar books *'m* is given as third person singular masculine reduced form, *'m* is actually used for both feminine and masculine nouns denoting non-animate entities.

that they cannot be isolated, modified, coordinated and focused (Cardinaletti & Starke 1996, 2000)

Second, these reduced forms can have an animate reference. This is even possible for the neuter pronoun, but note that this is quite marginal: the neuter pronoun can only refer to an animate entity if its referent is denoted by a neuter noun *and* if the sex of the referent is not known by the speaker (this can be the case for *het kind* 'the child', for example). An example is given in (1). Note that in the other cases, if the sex is known, the corresponding masculine or feminine pronoun will be used, even if the corresponding noun is neuter. This is exemplified in (2) and (3).

- (1) - Ik zag een bedelend kind op het station.
 I saw a begging child-N at the station
 'I saw a begging child at the station.'
- Ik kon niet zien of het een meisje of een jongen was.
 I could not see whether it a girl or a boy was
 'I couldn't see whether it was a girl or a boy.'
- Maar ik weet zeker dat ik 't niet eerder gezien had.
 but I know sure that I it not before seen had
 'But I am sure that I never saw it before.'
- (2) Dat meisje? Ik heb 'r zojuist gezien.
 that girl-N? I have her just seen
 'That girl? I just saw her.'
- (3) Dat jongetje? Ik heb 'm zojuist gezien.
 that little boy-N? I have him just seen
 'That little boy? I just saw him.'

Third, for non-animate entities, the third person singular '*m*' is used for both masculine and feminine nouns as can be seen in (4) and (5). The neuter pronoun '*t*' is used to refer to a non-animate entity denoted by a neuter noun and this is exemplified in (6).

- (4) De theepot? Ik heb 'm op de tafel gezet.
 the teapot-M? I have him on the table put
 'The teapot? I put it on the table.'
- (5) De krant? Ik heb 'm op de tafel gelegd.
 the paper-F? I have him on the table put
 'The paper? I put it on the table.'
- (6) Het boek? Ik heb 't op de tafel gezet.
 the book-N? I have it on the table put
 'The book? I put it on the table.'

Table II summarizes the use of the reduced object forms in Dutch.

Table II: The use of Dutch reduced object forms

	[+Animate]	[-Animate]
referring to a [+Neuter] noun	't	't
referring to a [-Neuter] noun	'm 'r	'm

The examination of ECM constructions in the next section suggests that not all reduced forms behave alike.

3. Exceptional Case Marking

Before discussing the ECM phenomenon, let's first take a look at Zwart's (1993, 1996) analysis. Zwart (1993) assumes that pronominal elements that have a syntactic distribution different than full DPs are clitics. According to Zwart (1996) several syntactic constructions lead to the conclusion that reduced forms in Dutch are clitics. One of these constructions is the ECM construction (other constructions are the Double Object Construction, to be discussed in the next section, and scrambling, not considered here).

Zwart (1993) states that full DPs "cannot cross an embedded subject in an Exceptional Case Marking construction", while reduced object forms can. He illustrates this fact with the examples (7 – 10).³ Indeed, the observation can be made that in (8b) the neuter reduced object form *'t* crosses over the embedded subject, which is not possible for a DP as can be seen in (7b). In (10b) the non-neuter form *'r* crosses over the embedded subject *Jan* while this is not possible for a DP as can be seen in (9b). The direct objects in these examples are boldprinted.

- (7) a. dat ik Jan **het boek** heb zien lezen.
 that I Jan the book have see-INF read-INF
 'that I saw him read the book.'
- b. *dat ik **het boek** Jan heb zien lezen.
 that I the book Jan have see-INF read-INF
- (8) a. dat ik Jan **'t** heb zien lezen.
 that I Jan it-ACC have see-INF read-INF
 'that I saw Jan read it.'
- b. dat ik **'t** Jan heb zien lezen.
 that I it-ACC Jan have see-INF read-INF

³ Examples (7) and (8) are cited from Zwart (1993), his examples (37) and (38), and examples (9) and (10) are from Zwart (1996:125), his examples (47) and (48).

- (9) a. dat Piet Jan **Marie** heeft zien kussen.
 that Piet Jan Marie has see-INF kiss-INF
 ‘that Piet saw Jan kiss Marie.’
 b. *dat Piet **Marie** Jan heeft zien kussen.
 that Piet Marie Jan has see-INF kiss-INF
- (10) a. dat Piet Jan **’r** heeft zien kussen.
 that Piet Jan her-ACC has see-INF kiss-INF
 ‘that Piet saw Jan kiss her.’
 b. dat Piet **’r** Jan heeft zien kussen.
 that Piet her-ACC Jan has see-INF kiss-INF

Note that the reduced forms ‘*t* and ‘*r* can not only precede the embedded subject as in (8b) and (10b) but also can occupy a position to the right of this embedded subject as in (8a) and (10a). This latter position can also be occupied by a DP as shown in (7a) and (9a). I would like to underline that this suggests that if the Dutch reduced forms are syntactic clitics, then they are not like the syntactic clitics in Romance languages. The Dutch reduced forms can occupy a higher position than a DP but they may also surface in the same position as a DP. This is excluded for Romance pronominal clitics, which can only occupy clitic positions.

According to Zwart, the subject of the embedded clauses in (9) and (10) is *Jan* and the object *Marie*/*r*. As can be observed, ‘*r*, contrary to a full DP, can precede the embedded subject. This is one of Zwart’s arguments in support of the claim that reduced forms are clitics.

Interestingly, in the Standard Dutch variety that I speak, the example (10b) must be preceded by an asterisk, whereas I accept the neuter reduced form ‘*t* to precede the embedded subject as in (8b). In (9’) and (10’) Zwart’s examples are repeated, but this time preceded by my grammatical judgements. Example (10b’) shows that the non-neuter reduced form ‘*r* cannot precede the embedded subject.^{4,5}

- (9’) a. dat Piet Jan **Marie** heeft zien kussen.
 that Piet Jan Marie has see-INF kiss-INF
 ‘that Piet saw Jan kiss Marie.’
 b. *dat Piet **Marie** Jan heeft zien kussen.
 that Piet Marie Jan has see-INF kiss-INF

⁴ More precisely, in (9b) and (10b) the object – subject reading is excluded but not the subject – object reading. This means that these examples are perfect for me if *Marie* and ‘*r* are considered as the subject and *Jan* as the object of the embedded clause.

⁵ Note that, according to my judgements, the corresponding full form (strong pronoun) *haar* ‘her’ has the same behavior as *Marie* and ‘*r* in examples (9’) and (10’). For Zwart (1997) however *haar* has the same behavior as *Marie* (but not as ‘*r*) as in example (9).

- (10) a. dat Piet Jan 'r heeft zien kussen.
 that Piet Jan her-ACC has see-INF kiss-INF
 'that Piet saw Jan kiss her.'
- b. *dat Piet 'r Jan heeft zien kussen.
 that Piet her-ACC Jan has see-INF kiss-INF

Apparently there exists an optionality in Dutch. In the variety spoken in the Southern parts of the Netherlands (Zwart, p.c. and Haegeman for Belgium's West-Flemish), all reduced object forms can precede the embedded subject in ECM constructions. In contrast, in Standard Dutch (my variety) only the reduced object form 't can precede the embedded subject in ECM.⁶

These findings lead to a first conclusion. In Standard Dutch, the reduced object forms do not constitute a homogenous class: a neuter – non-neuter distinction can be established. The neuter form 't can climb to a higher position in the structure and the non-neuter forms 'r and 'm cannot climb to this (higher) position.

In the next section the Double Object Construction will be examined. This construction provides further data to strengthen the idea that reduced object forms belong to two different classes.

4. Double Object Construction

The canonical order of the objects in the Double Object Construction is indirect object followed by direct object as in (11), when the two objects are full DPs. Nevertheless, Zwart argues that if the direct object is a reduced form, it must precede the full DP. This is exemplified in (12) for the reduced object form 't. Example (12b) is quite interesting, because the reduced form 't seems to be moved into a higher position which is not accessible for direct object DPs and full forms. Again the direct objects are boldprinted in these examples.

- (11) a. dat Jan Marie **het boek** gegeven heeft.
 that Jan Marie the book-NEUT given has
 'that John gave Mary the book.'
- b. ?? dat Jan**het boek** Marie gegeven heeft.
 that Janthe book-NEUT Marie given has
- (12) a. ?? dat Jan Marie 't gegeven heeft.
 that Jan Marie it given has
 'that John gave it Mary.'
- b. dat Jan 't Marie gegeven heeft.
 that John it Mary given has

⁶ Note that the masculine reduced form 'm has the same behavior as the feminine reduced form 'r.

As observed in (12b) the direct object reduced form can precede the indirect object full DP, while a direct object full DP cannot. This is a capital difference between reduced forms and full DPs. Apparently reduced object forms can move to a higher position than full DPs.

A closer look at the DOC in Dutch will show that the facts are more complicated than the examples (11) - (12) suggest. Indeed, in these examples the verb *geven* 'give' has a non-animate direct object and an animate indirect object. In the examples (13) - (14), I changed Zwart's examples: here, the verb *aanbieden* 'offer' has two animate objects. The syntactic distribution changes and an important observation has to be made. Example (14b) shows that if the two objects are animate, the direct object reduced form cannot precede an indirect object full DP, while this is possible when the direct object is non-animate as we saw in (12b).

- (13) a. dat de regisseur de actrice **deze souffleur** aangeboden heeft.
 that the producer the actress this prompter offered has
 'that the producer offered the actress this prompter.'
- b. *dat de regisseur **deze souffleur** de actrice aangeboden heeft.
 that the producer this prompter the actress offered has
- (14) a. *dat de regisseur de actrice **'m** aangeboden heeft.
 that the producer the actress him offered has
 'that the producer offered him to the actress.'
- b. *dat de regisseur **'m** de actrice aangeboden heeft.
 that the producer him the actress offered has

Zwart (1993, 1996) assumes that the reduced forms in Dutch are syntactic clitics. This idea is based on the fact that reduced forms show a different syntactic distribution than full DPs. The example (12b) in particular supports this hypothesis. In the example (14b) however, the reduced direct object form cannot precede the indirect object full DP as was expected from example (12b).⁷ A possible explanation is that the reduced form can only precede the indirect object full DP if it refers to a non-animate entity. However, the following examples suggest that this cannot be the right explanation. Examples (15) and (16) show that the reduced forms *'m* (3rd person singular non-neuter) and *ze* (3rd person plural), referring to a non-animate entity cannot precede the full DP indirect object. This is possible for the reduced form *'t* (3rd person singular neuter) as was shown in (12b).

- (15) a. dat Jan de actrice **de auto** gegeven heeft.
 that Jan the actress the car-MASC given has
 'that Jan gave the actress the car.'

⁷ Note that the feminine reduced form *'r* has the same behavior as the masculine reduced form *'m*.

- b. *dat Jan ‘**m** de actrice gegeven heeft.
that Jan him the actress given has
‘that Jan gave it to the actress.’
- (16) a. dat Jan de actrice **de boeken** gegeven heeft.
that Jan the actress the books given has
‘that Jan gave the actress the books.’
- b. *dat Jan **ze** de actrice gegeven heeft.
that Jan them the actress given has
‘that Jan gives them to the actress.’

These data constitute further evidence in favor of the idea that reduced object forms do not form an homogenous class, namely that a distinction should be established between neuter and non-neuter reduced forms.

A third argument in favor of the idea that reduced object forms do not behave in the same way, will be discussed in the following section. This argument concerns Prepositional Phrases.

5. Prepositional Phrases

It is known that the object position of a prepositional phrase (PPs) must be filled by a maximal projection, represented most of the time by a full DP or a strong pronoun. This is also the case in Dutch as shown by example (17).

- (17) a. Ik heb vaak aan **Marie** / aan **haar** gedacht.
I have often on Marie / on her thought
‘I’ve thought a lot of Marie / her.’
- b. Ik heb vaak aan **Piet** / aan **hem** gedacht.
I have often on Piet / on him thought
‘I’ve thought a lot of Piet / him.’

Interestingly, the non-neuter forms ‘*r* and ‘*m* can also surface as object of a preposition. This can be seen in (18).

- (18) a. Ik heb vaak aan **Marie** / aan ‘**r** gedacht.
I have often on Marie / on her thought.
‘I’ve thought a lot of Marie / her.’
- b. Ik heb vaak aan **Piet** / aan ‘**m** gedacht.
I have often on Piet / on him thought
‘I’ve thought a lot of Piet / him.’

Note that in the examples (18) '*r* and '*m* refer to an animate entity. If the referent of the pronoun is non-animate this position becomes unavailable. Example (19) shows this.⁸

- (19) a. De fiets was aan de boom / *aan '**m** vastgemaakt.⁹
 the bike was on the tree-MASC/ on him fixed
 'The bike was fixed on a tree.'
- b. De fiets was aande heg / *aan '**m** vastgemaakt.
 the bike was on the hedge-FEM / on him fixed
 'The bike was fixed on the hedge.'

As remarked in section 2, the neuter form '*t* can refer to non-animate entities (denoted by a neuter noun) and also to an animate entity (when the sex of the referent is not known by the speaker and when the referent is denoted by a neuter noun). Consider the following examples in (20).

- (20) a. De fiets was aan het hek/ *aan '**t** vastgemaakt.
 the bike was on the bars/*on it fixed
 'The bike was fixed on the bars.'
- b. - Ik liep op het station toen ik een bedelend kind zag.
 I walked on the station when I a begging child saw
 'I was walking in the station, when I saw a begging child.'
- Ik kon niet zien of het een jongen of een meisje was.
 I could not see if it a boy or a girl was
 'I couldn't see if it was a boy or a girl.'
- Ik had net appels gekocht, dus heb ik er één
 I had just apples bought so have I clit one
 *aan '**t** gegeven.
 to it given
 'I had just bought a bag of apples, so I gave one to it.'

These examples show that the neuter form '*t* cannot surface as object of a preposition if it refers to a non-animate entity (20a). Interestingly, the position is also unavailable when '*t* refers to an animate entity (20b). These last facts provide further evidence that the reduced neuter form '*t* behaves differently than the reduced forms '*r* and '*m*.

In the next section I will discuss

⁸ Recall that '*m* is used to refer to both feminine and masculine non-animate nouns.

⁹ If the reduced form refers to no-animate entities another construction is triggered. The reduced form will be replaced by the expletive form *er*, which will be placed before the preposition. So (19) will be as in (i).

(i) De fiets was **eraan** vastgemaakt
 The bike was er-on fixed.

two existing analyses for Dutch pronouns and an analysis proposed for pronouns in Romance languages. I will show why these analyses should (at least) be refined.

6. Discussion

The constructions examined in this paper show the following facts:

(i) In ECM constructions only the reduced neuter form *'t* can cross an embedded subject, the other non-neuter reduced forms *'r* and *'m* cannot.

(ii) In Double Object Constructions only the reduced neuter form *'t* can precede a full DP indirect object, the non-neuter reduced forms *'r* and *'m* are excluded in that position.

(iii) Only the reduced neuter form *'t* cannot surface as object of a preposition, regardless of whether its referent is animate or non-animate. The two non-neuter reduced forms can surface as object of a preposition, but only when their referent is [+animate].

(iv) As far as I know, property (iii) holds both in Standard Dutch and in the varieties spoken in the South of the Netherlands (studied by Zwart 1993, 1996). In this part of the country no distinction is made between neuter and non-neuter reduced forms in ECM and DOC.

Recall that for Zwart (1993, 1996) reduced forms are syntactic clitics, while for Cardinaletti & Starke (1996) reduced object forms are weak pronouns. In what follows, I will come back to their propositions in relation to the facts (i) through (iv) summarized above.

First the analysis of Cardinaletti & Starke will be discussed (section 6.1), followed by Zwart's analysis (section 6.2.). Before a brief conclusion (section 6.4.), I will discuss the analysis of Jakubowicz & Nash proposed for Romance pronouns (section 6.3).

6.1. Cardinaletti & Starke's analysis

Let us first consider Cardinaletti & Starke's tripartition of pronouns into: strong pronouns, weak pronouns and clitics. For these authors weak pronouns and clitics are similar in that they are phonologically deficient elements. In contrast, weak pronouns and clitics differ regarding to their X-bar status. The former are XPs, the latter are syntactic heads. Weak pronouns are similar to strong pronouns in that both types of pronouns are XPs; they differ from each other in that strong pronouns are not phonologically deficient elements. Furthermore strong pronouns differ from weak pronouns and clitics in that strong pronouns can only have an animate referent, whereas weak pronouns and clitics may refer to both animate and non-animate entities. This is summarized in table III.

Table III: Classification of pronouns by Cardinaletti & Starke

	Strong pronouns	Weak pronouns	Clitics
phonological status		deficient	deficient
syntactic status	XP	XP	X ^o
semantic status	[+human]	[±human]	[±human]

Cardinaletti & Starke (1996) claim that their tripartition applies also to the Dutch pronouns. According to their analysis of Dutch, all full object forms are strong pronouns. All reduced forms are weak pronouns.¹⁰ Cardinaletti & Starke's analysis of full forms as strong pronouns seems uncontroversial, in contrast their claim that reduced forms are weak pronouns can be questioned on the basis of the data presented here.

If the reduced forms '*r*', '*m*' and '*t*' were all weak pronouns we would expect them to surface in the positions where full DPs can appear. Thus, weak pronouns are expected to surface as object of a preposition. However, only the non-neuter forms '*r*' and '*m*' can surface in this position, the neuter form '*t*' is excluded (section 5).

It is a fact that in Double Object Constructions reduced forms can occupy positions that DPs can occupy, but they are subject to restrictions that do not exist for DPs. For example, a full DP direct object can follow a full DP indirect object (see example (11a)), but a reduced form direct object cannot follow a full DP indirect object (example (12a)). However in Double Object Constructions and ECM constructions, the neuter reduced form '*t*' can climb to higher positions than the non-neuter reduced forms. These observations are not predicted by the analysis for Dutch pronouns as proposed by Cardinaletti & Starke.

Following Cardinaletti & Starke's analysis we should say that '*t*' is a clitic and not a weak pronoun. However we have to add that if '*t*' is a syntactic clitic, it is not a clitic like the Romance syntactic clitics. In ECM constructions, the neuter reduced form '*t*' can occupy the same position as a DP but it can also occupy a higher position, excluded for a DP (This is shown in the examples (8a–b)). Romance clitics in contrast, can only occupy a clitic position and this position is always excluded for a DP.

Keeping Cardinaletti & Starke's idea that the reduced forms '*m*' and '*r*' are weak pronouns raises additional problems. First, their analysis does not explain why '*m*' and '*r*' can be object of a preposition only when they refer to an animate entity, while surfacing in this position is excluded when they refer to a non-

¹⁰ More precisely they propose that all full forms (subject and object pronouns), except the subject form *hij* (3rd person singular masculine), are strong pronouns. All reduced forms except the subject form *ie* (3rd person singular masculine) and the full form *hij* are weak pronouns while the reduced subject form *ie* is considered as a syntactic clitic. In this paper I only considered the object pronouns, which these authors suppose to be divided in two distinct classes, namely full forms are strong pronouns while reduced forms are weak pronouns.

animate entity.¹¹ Second, while Cardinaletti & Starke (1996, 2000) argue that weak pronouns can refer to both [+human] and [-human] entities, the reduced form 'r (a weak pronoun for Cardinaletti & Starke) does not have both these referring properties.¹²

My conclusion is that the tripartition as proposed by Cardinaletti & Starke does not easily apply to the pronominal system of Dutch.

6.2. Zwart's analysis

Let us now consider Zwart's position. For Zwart (1993) a clitic is an element that has a different syntactic distribution than a DP. In this view clitics can be identified without invoking phonological criteria. Furthermore clitics are syntactic heads from the point of view of X-bar theory. If, following Zwart, the reduced forms are clitics we would expect that they should not behave as DPs. Namely they should appear in positions where DPs are forbidden. As we have already mentioned in Standard Dutch only the reduced neuter form 't can appear in a position where DPs and the non-neuter forms 'r and 'm are excluded. This is a problem for considering all reduced forms as clitics. The data presented in this paper would suggest that only the neuter form 't is a clitic.

Furthermore, if clitics, as proposed by Zwart, appear in positions disallowed for DPs, one should expect that their distribution will not overlap. In ECM constructions, although 't can climb higher, it can also appear in positions where a DP can appear (see example (8)).¹³

Moreover, the object position of a prepositional phrase being traditionally filled by a maximal projection, we would not expect the reduced forms to appear in this position, if they were clitics in Zwart's sense.

Finally, adopting Zwart's idea that all reduced forms are clitics and given the fact that they can also appear in DP positions, this again suggests that Dutch clitics are quite different from Romance clitics.

¹¹ Cardinaletti & Starke would probably respond that these two forms are ambiguous and that, if they are referring to animate entities, they behave as weak pronouns, while if they are referring to non-animate entities, they behave as clitics.

¹² However in Cardinaletti & Starke (1995) these authors consider that 'as a general class, deficient pronouns can take both values (while it may be the case that one or another individual instance of deficient pronoun is lexically restricted to human or non-human)'.
¹³ If one considers that the other reduced forms ('r and 'm) are also clitics, the same remark will apply. That is, if they were clitics, we would not expect them to appear in positions where a DP can appear.

6.3. Jakubowicz & Nash' analysis

In this section a third analysis, proposed by Jakubowicz & Nash (2000) will be discussed. This analysis is more particularly developed for Romance pronouns, while the two preceding analyses were more particularly proposed for Dutch. It would be nevertheless interesting to see if it can be applied to the Dutch pronominal system. In Jakubowicz & Nash' analysis a pronominal element is a clitic if it is categorially deficient. Being categorially deficient implicates phonological deficiency and is defined in terms of specification for animateness. A noun is specified for animateness in that it has a [+animate] or a [-animate] denotation. Strong pronouns are always [+animate]. Furthermore Jakubowicz & Nash propose that strong pronouns and DPs have a lexical root (in the spirit of the Distributed Morphology, proposed by Halle & Marantz, 1993), which is expressed by their specification for animateness. If a pronominal element lacks a lexical root, then it is a clitic. Therefore clitics can have both a [+animate] and a [-animate] denotation.

Following Jakubowicz & Nash' analysis Dutch full forms are strong pronouns. It is not clear whether the reduced forms are clitics in the sense of Jakubowicz & Nash (op.cit.). At first sight we would say that 'r is specified for animateness ('r = [+animate]) while 'm is underspecified for this feature ('m = [\pm animate]). The reduced neuter form 't is overwhelmingly [-animate] and only marginally [+animate]. In this view only the reduced form 'm would be a clitic (but not as Romance clitics as we will see below).

However, suppose now that all reduced forms lack a lexical root. This is uncontroversial for the reduced form 'm, which can indeed refer to both [+animate] and [-animate] entities. One could argue that the neuter form 't also lacks a lexical root. The fact that 't refers only marginally to animate entities can be explained by the fact that the sex of the referent takes precedence over the grammatical gender of the noun it denotes. In this way the reduced form 't can nevertheless be considered as denoting [\pm animate] entities. Nevertheless the reduced form 'r clearly has a [+animate] status, but recall that feminine nouns denoting a non-animate entity are expressed by the reduced form 'm. Suppose now that 'r for unclear reasons does not exist (maybe does not exist anymore??) for [-animate] feminine entities and that it is replaced by a default form which is 'm. Then the reduced form 'r also lacks a lexical root.

This idea may be controversial but simply suppose that somehow the reduced object forms in Dutch indeed lack a lexical root and that they are clitics. If this idea is true the following questions can be raised.

First, why, does the reduced neuter form 't behave different than the reduced non-neuter forms 'r and 'm? Second, how is it that the non-neuter reduced forms 'r and 'm can only be object of a preposition when they refer to an animate entity? Moreover, the fact that the non-neuter reduced forms 'r and 'm can be object of a preposition is not expected if they are analyzed as Romance syntactic clitics.

6.4. Conclusion

In this paper a certain number of questions have been raised. An adequate analysis of the Dutch pronominal system should be able to answer these questions.

First, it seems to be the case that the reduced object forms do not constitute a homogeneous class, as often supposed. The reduced neuter form 't has a different behavior than the reduced non-neuter forms 'm and 'r. It has also been noted that the behavior of the reduced non-neuter forms 'm and 'r depends on whether these forms refer to animate entities or to non-animate entities. If 'm and 'r refer to an animate entity, they can be object of a preposition, while they cannot if they refer to non-animate entities.

Second if we decide to analyze Dutch reduced object forms as syntactic clitics, we also have to say that these clitics are not of the same type as the syntactic clitics in Romance.

Providing an adequate analysis for Dutch pronouns is one of the aims of my dissertation.

Acknowledgements

I would like to thank Celia Jakubowicz and Lea Nash for their helpful comments and remarks. Thanks are also due to Jennifer Wong.

References

- Cardinaletti, A. & M. Starke (1995). The tripartition of pronouns and its acquisition: Principle B puzzles are ambiguity problems. *Proceedings of the North Eastern Linguistic Society* 25:2, pp. 1-12.
- Cardinaletti, A. & M. Starke (1996). Deficient pronouns: A view from Germanic: A study in the unified description of Germanic and Romance. *Studies in comparative Germanic syntax* 38:2, pp. 21-65.
- Cardinaletti, A. & M. Starke (2000). Overview: The grammar (and acquisition) of clitics. Powers, S.M. & C. Hamann (eds.), *The acquisition of scrambling and cliticization*, Kluwer, Dordrecht, pp. 165-186.
- Halle, M. & A. Marantz (1993). Distributed morphology and the pieces of inflection. Hale, K. & S.J. Keyser (eds.), *The view from building 20. Essays in linguistics in honor of Sylvain Bromberger*, MIT Press, Cambridge, MA, pp. 111-176.
- Jakubowicz, C. & Nash, L. (2000). Why accusative clitics are avoided in normal and impaired language development. Paper presented at the workshop *Determiners and Pronouns: Grammar and (Ab)normal Acquisition*, Paris.
- Zwart, C. J. W. (1993). Verb movement and complementizer agreement. *MIT Working Papers in Linguistics* 18, pp. 297-341.
- Zwart, C. J. W. (1996). *Morphosyntax of verb movement. A minimalist approach to the syntax of Dutch*. Kluwer, Dordrecht.

Wh-drop in child languages and adult ASL

Kyoko Yamakoshi

This paper deals with the dropping of wh-words (i.e., wh-drop) in child languages and adult ASL. Wh-drop has been reported in child Swedish, Dutch, German, French, Spanish and English, but we show that wh-drop rarely occurs in child Japanese based on the examination of natural speech data and the results of the experiments we conducted. We propose that the occurrence of wh-drop depends on the properties of wh-words in overt wh-movement languages and wh-in-situ languages. Furthermore, we suggest that wh-drop occurs due to the principle of least effort.

1. Introduction

This paper examines the dropping of wh-words in child languages and adult American Sign Language, which is called ASL. It has been reported that children frequently drop wh-words when acquiring V2 languages such as Swedish, Dutch and German. An example from child Swedish is shown in (1) :

- (1) säger han ? (Tor 2;7 from Santelmann 1997)
 says he
 ‘(What) does he say?’

The underline shows that the wh-word, which should be in sentence-initial position, was not produced by the child. I refer to this dropping of wh-words as “wh-drop”. The occurrence of wh-drop is not allowed in the corresponding adult languages.

The question arises whether wh-drop occurs in any adult language. It has been reported that wh-drop is observed in adult ASL, as shown in (2). (Petronio & Lillo-Martin 1997):

- (2) Possible context: Speaker knows that addressee received several gifts from different people and somebody gave the earrings to the addressee.

_____ Topic _____ whq
 EARRINGS, e GIFT (Petronio & Lillo-Martin 1997)
 ‘Who gave you the earrings?’

In ASL, overt wh-words usually appear in wh-questions. However, when the content of the wh-word can be identified from the context, wh-drop occurs as in (2). The capital letters in (2) show the glosses of the manual markers, and the lines above show the nonmanual markers such as facial expressions and head movements.

With regard to wh-drop in child languages, it seems to occur not only in child V2 languages but also in child French, Spanish and English. However, wh-drop does not seem to occur in child Japanese. We will give a parametric account to explain the difference. Furthermore, we will suggest that a pragmatic principle lies in the occurrence of wh-drop in child speech and adult ASL. In section 2, let us examine wh-drop in child languages in detail.

2. Wh-drop in child languages

2.1. V2 languages (Swedish, Dutch and German)

Wh-drops in child Swedish, Dutch and German are examined in detail by Santelmann (1995, 1997), Van Kampen (1997), Felix (1980) among others.

The following are characteristics of wh-drop. First, as shown in (3), various kinds of wh-words are dropped in child Swedish, Dutch and German. We also find that wh-drop questions occur with different kinds of verbs and auxiliaries in various tenses. The verbs appear in sentence-initial position, which shows that V-to-C movement has occurred.

- (3) Swedish (Santelmann 1995, 1997)
- a. _____ sa du? (Embla 2;3)
 said you
 ‘(What) did you say?’
 - b. _____ har hänt? (Ask 2;3)
 has happened
 ‘(What) has happened?’
 - c. _____ gör apa då? (Tor 2;5)
 makes monkey then
 ‘(How) does the ape (go) then?’
 - d. _____ kan den inte komma in? (Ask 2;3)
 can it not come in
 ‘(Why) can it not come in?’

(4) Dutch (Van Kamen 1997)

- a. ____ lag mijn lepel nou? (Laura 3;6.26)
 lied my spoon then
 '(Where) was my spoon?'
 b. ____ heb dat daan nou? (Sarah 2;4.18)
 has that done then
 '(Who) has done that?'
 c. ____ kan dit nou in? (Laura 3;7.25)
 can this one then in
 '(How) can this one go in?'

(5) German (Felix 1980)

- a. (Father is fixing Bernie's toy car. The boy curiously watched the action.)
 Bernie: ____ macht du denn?
 do you then
 '(What) are you doing?'
 b. (Bernie's mother layed the table for four - instead of the usual three – people. Bernie curiously inspected the unaccustomed set-up and asked):
 Bernie: ____ sitz du denn?
 sit you then
 '(Where) do you sit?'
 c. (Bernie is busy doing a puzzle with wooden blocks. However, he is not very successful.)
 Bernie: kann das nicht: ____ geht das denn?
 can that not work that then
 'Cannot do that, (how) does that work?'

Although we have noted that V-to-C movement occurs in matrix wh-drop questions, it has been pointed out by Wode (1975) and Tracy (1991) that wh-drop occurs in wh-questions with a verb in sentence-final position in child German:

- (6) a. Henning, ____ diese Auto gehört? (2;8) (Wode 1975)
 Henning, this car belongs
 'Henning, (whom) does this car belong to?'
 b. ____ der Flöte is? (1;11) (Tracy 1991)
 the flute(recorder) is
 '(Where) is the flute?'

However, Gretch (1999) claims that (6) is not a true wh-drop. She shows that the dropping of wh-words occurs in adult German with verbs in final position as shown in (7).

- c. weet jij ik heet? (Laura 3;8.6)
 know you I call
 'Do you know (how) I am called? (=what my name is?)'

The occurrence of wh-drop in embedded clauses suggests that wh-drop may not be related to V-to-C movement. In the following subsections, we show that wh-drop also occurs in the non-V2 child languages.

2.2. French and Spanish

Wh-drop is reported in child French and Spanish by a few studies. Guillaume (1927), in his diary study, notes that, at the age of 1;10, his subject acquiring French dropped wh-words in spontaneous speech as in (11):

- (11) a. ____ il est? (1;10) (Guillaume 1927)
 he is
 'Where is he?'
 b. ____ il est l'autre de maman? (1;10)
 it is the other of mama
 'Where is it, mama's the other one?'

In (11), *Où est-ce que* 'where is-it that' in sentence-initial position seems to be dropped.

Hernández-Pina (1984) (cited in Pérez-Leroux 1993) reports that wh-drop questions appear in child Spanish as in (12).

- (12) a. ____ ta taza nene? (after two years)
 is cup child
 'Where is the child's cup?'
 b. don tá las papas?
 whe(re) are the potatoes
 'Whe(re) are the potatoes?'

In (12a), the wh-word *donde* 'where' is completely dropped, whereas in (12b), *donde* is partially dropped. Since wh-drop in child French and Spanish is only reported by those studies, further examination is needed.

2.3. English

2.3.1. Previous Studies

Wh-drop is reported in the spontaneous speech of children acquiring English by Radford (1990) as shown in (13):

- (13) a. ____ You got? (Harriet 1;6)
 'What have you got?'
 b. ____ Car going? (Jem 1;9)
 'Where is the car going?'
 c. ____ My shoes gone? (Jenny 1;10)
 'Where have my shoes gone?'

Brown and Fraser (1963) report that children dropped wh-words in sentence-initial position as in (14) when they were asked to repeat adult wh-questions in an elicited imitation experiment:

- (14) ADULT SENTENCES / CHILD'S IMITATION
 a. Where shall I go? / Go? (Eve 2;1)
 b. Where does it go? / Go? (Adam 2;4)
 c. Where does it go? / Does it go? (Helen 2;6)

However, wh-drop in child English has not been focused on very much and its frequency is unknown. To confirm the presence of wh-drop and to find out its frequency in child English, I conducted an experiment shown in 2.3.2.

2.3.2. Experiment 1: Child English

The subjects were 19 monolingual English-speaking children listed in Table 1.

Table 1: Number of the subjects and their ages

Age	2;9-2;11	3;1-3;11	4;0-4;11
Number	6	8	5

The experiment was a combination of a comprehension task and an elicited production task as shown in (15).

- (15) Example of a test sentence: matrix wh-question
 (showing a picture in which Pooh bear is hiding in a bucket)
 Experimenter : Who is hiding in the bucket?
 Child : Pooh.
 Experimenter : Yes! Can you ask Mommy/Mickey(doll)
 who is hiding in the bucket?
 Child : Mommy, who is hiding in the bucket?
 Mother: Pooh is hiding in the bucket.

First, the experimenter, who was a native speaker of English, asked a child a wh-question such as 'Who is hiding in the bucket?' with a picture, to see whether the child could comprehend the wh-question. Next, the experimenter asked the child, 'Can you ask Mommy who is hiding in the bucket?'. This tries to elicit a wh-question from the child to see if the child produce a wh-drop

question. The test sentences included 14 matrix wh-questions and 3 embedded wh-questions. The results for the matrix wh-questions are shown in Table 2.

Table 2: Matrix wh-questions

	Correct responses with overt wh-words	Responses with wh-drop	Irrelevant responses
2-year-olds	42 (82.4%)	9 (17.6%)	33
3-year-olds	97 (98.0%)	2 (2.0%)	13
4-year-olds	62 (100.0%)	0 (0.0%)	8

Table 2 shows that 17.6% of all the wh-questions produced by the two-year-olds were wh-drop questions and that 2% of the wh-questions produced by the three-year-olds were wh-drop questions. Examples of wh-drop questions produced by the children are shown in (16). Words in parentheses show what was dropped.

- (16) a. (Who is) hiding in the bucket? (Brittney 2;9)
 b. (Which) dog is barking? (Brittany 2;9)
 c. (Why is the) mouse crying? (Brittany 2;9)
 d. (What is the) boy eating? (Ana 2;11)
 e. (Which car is) the cat driving? (Avery 3;1)

In the case of the embedded wh-questions, even older children produced wh-drop questions. An example of the task is shown in (17).

- (17) Example of a test sentence: embedded wh-question
 (Showing a picture of Pooh eating honey)
 Experimenter : Do you know what Pooh is eating?
 Child : Yes, honey.
 Experimenter : Can you ask Mommy/Mickey(doll),
 "Do you know what Pooh is eating?"
 Child : Mommy, do you know what Pooh is eating?

We used the phrase 'Do you know' to make embedded wh-questions. The results of the embedded wh-questions are shown in Table 3.

Table 3: Embedded wh-questions

	Correct responses with overt wh-words	wh-drop with "Do you know" at the beginning of the question	wh-drop without "Do you know"	Irrelevant responses
2-year-olds	6 (50.0%)	0 (0.0%)	6 (50.0%)	6
3-year-olds	15 (83.3%)	3 (16.7%)	0 (0.0%)	6
4-year-olds	12 (100.0%)	0 (0.0%)	0 (0.0%)	3

As Table 3 shows, in 50% of the embedded wh-questions produced by the two-year-olds, both 'do you know' and wh-words are dropped. Three-year-old children dropped only wh-words in 16.7% of the embedded wh-questions they produced. Examples of children's wh-drop questions without the phrase 'do you know' and with the phrase are shown in (18):

- (18) a. (Do you know what) Pooh is eating? (Brittney 2;9)
 b. You know (where) the cat is resting? (Austin 3;2)

To summarize, by conducting this experiment, we have confirmed that wh-drop occurs both in matrix wh-questions and embedded wh-questions in child English.

Next, let us examine Japanese, which is a typologically different language in that it does not have overt wh-movement and it allows the dropping of arguments such as subjects and objects.

2.4. Japanese

2.4.1. Experiment 2: Child Japanese

I conducted an experiment which was similar to the one in the previous section with 15 monolingual Japanese children, shown in Table 4.

Table 4 : Number of subjects and their ages

Age	2;5 -2;11	3;1 - 3;9	4;5 - 4;7
Number	6	6	3

The test sentences used in this experiment were 27 matrix wh-questions containing all kinds of wh-words in both sentence-initial position and sentence-medial position because Japanese allows scrambling of wh-words. The results for matrix wh-questions are shown in Table 5.

Table 5: Matrix wh-questions

	Correct responses with overt wh-word	Responses with wh-drop	Irrelevant responses
2-year-olds	117 (96.7%)	4 (3.3%)	34
3-year-olds	154 (100.0%)	0 (0.0%)	8
4-year-olds	78 (100.0%)	0 (0.0%)	0

Table 5 shows that only 3.3% of all the wh-questions produced by 2 two-year-old children were wh-drop questions. The children whose ages were 2;5 and 2;9 produced 4 wh-drop questions as shown in (19):

- (19) a. Okaasan, raion-kun (nande) naiteru no? (Koji 2;5)
 Mommy, lion (why) cry-PROG Q
 ‘Mommy, (why) is the lion crying?’
- b. (doushite) zou-san naiteru no? (Koji 2;5)
 (why) elephant cry-PROG Q
 ‘Why is the elephant crying?’
- c. (naze) Naiteru no?(naze) kore, kore naiteru no?
 (why) cry-PROG Q (why) this, this cry-PROG Q
 (naze) kore naiteru no? (Koji 2;5)
 (why) this cry-PROG Q
 ‘(Why is this) crying? (Why is) this, this crying? (Why is) this
 crying?’
- d. Mama (itsu) nenne-suru no? (Maimi 2;9)
 mommy (when) sleep Q
 ‘(When does) Mommy sleep?’

We have also tested two embedded wh-questions with the subjects in Table 6. The results are shown in Table 7.

Table 6: Number of subjects and their ages

Age	2;5 -2;11	3;1 - 3;9	4;5 - 4;7
Number	4	4	3

Table 7: Embedded wh-questions

	Correct responses with overt wh-word	Responses with wh-drop	Irrelevant responses
2-year-olds	1 (100.0%)	0 (0.0%)	7
3-year-olds	2 (100.0%)	0 (0.0%)	6
4-year-olds	5 (100.0%)	0 (0.0%)	1

Table 7 shows that wh-drop did not occur in embedded wh-questions in child Japanese.

In addition, I conducted an experiment with 5 Japanese children by using the same test sentences and pictures as were used in the first experiment in child English which we have seen in section 2.3. The result was that no wh-drop questions were found.

2.4.2. Natural speech data of Japanese children

To see whether wh-drop occurs in Japanese children’s natural speech, Yamakoshi (1999) examined longitudinal speech data of one child, Akifumi (1;5.7-3;0.0), taken from the CHILDES database (MacWhinney 1995, Oshima-Takane & MacWhinney 1995) and cross-sectional speech data of four

children collected by Cornell University language acquisition lab. The subjects are shown in Table 8.

Table 8: Information on the cross-sectional speech data

Subject	Age	#utterances	Total #Wh Qs
Hiroko	2;2	279	10
Kuniyuki	2;5	394	6
Goichiro	2;7	450	15
Takayuki	2;10	484	47

We found that wh-drop questions were not observed in these children's natural speech.

In sum, wh-drop rarely occurs in child Japanese. In the next section, we look at wh-drop questions in adult American Sign Language.

3. Wh-questions and wh-drop in adult American Sign Language (ASL)

As I mentioned briefly in section 1, ASL normally has overt wh-words in wh-questions. As shown in (20), wh-words often appear in both sentence-initial and final positions. Wh-words also appear in either position as shown in (21) and (22). It can also appear in wh-in-situ position as shown in (23).

- (20) _____ whq
 WHAT JOHN BUY YESTERDAY WHAT
 'What did John buy yesterday?' (Petronio & Lillo-Martin 1997)
- (21) _____ whq
 TEACHER LIPREAD YESTERDAY WHO
 'Who did the teacher lipread yesterday?' (Neidle et al. 2000)
- (22) _____ whq
 WHO BILL SEE YESTERDAY
 'Who did Bill see yesterday?' (Crain & Lillo-Martin 1999)
- (23) _____ whq
 TEACHER LIPREAD WHO YESTERDAY
 'Who did the teacher lipread yesterday?' (Neidle et al. 2000)

Petronio & Lillo-Martin (1997) point out that wh-drop occurs in adult ASL when the content of the dropped wh-word can be identified from its context. Examples are in (24):

- (24) a. Possible context: Speaker knows that addressee received several gifts from different people and that somebody gave the earring to the addressee.
 _____ topic _____ whq
 EARRINGS, *e* GIFT
 ‘Who gave you the earrings?’ (Petronio & Lillo-Martin 1997)
- b. Possible context: Speaker knows addressee isn’t feeling well, possibly due to something unhealthy s/he ate.
 _____ topic _____ whq
 BREAKFAST, EAT *e*
 ‘As for breakfast, what did you eat?’ (P & L 1997)
- c. _____ whq
 NAME
 ‘What’s your name?’ (P & L 1997)
- d. _____ whq
 TIME
 ‘What time is it?’ (P & L 1997)

In (24a), the possible context is that the speaker knows addressee received several gifts from different people and somebody gave the earrings to the addressee. The italicized ‘e’ indicates that wh-drop occurs. In (24b), the speaker knows that the addressee ate something bad, but the speaker does not know what it was. The content of the dropped wh-word ‘what’ is recoverable from the situational context, and thus wh-drop occurs. Because (24c) and (24d) are frequently used wh-questions, the contents of the dropped wh-words must be easily identified, and wh-drop occurs.

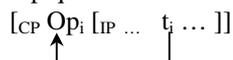
It seems that the dropped wh-word can be identified not only from its situational context but also from the non-manual marker. In (24), the lines with whq corresponds to the non-manual marker involving furrowed brows and the head tilt. This non-manual marker for wh-questions is clearly different from the non-manual marker for yes/no questions, which corresponds to raised brows and the head tilt. Because the marker for wh-questions and yes/no questions are distinct, for instance, (24b) is correctly interpreted as a wh-question even if the wh-word is dropped, not as a yes/no question which would mean ‘Did you eat breakfast?’. In the next section, we try to give an analysis for why wh-drop occurs in adult ASL and some child languages.

4. Analysis

The first question we would like to consider is why wh-drop occurs in some child languages and adult ASL. Based on the facts that wh-questions with overt wh-words are also observed in those child languages and adult ASL, we propose that the occurrence of wh-drop is due to the use of a null wh-operator. In some child languages and adult ASL, a null wh-operator is allowed. Let us

postulate that they have the parametric value [+ null wh]. This null wh-operator has a [+wh] feature, and as shown in (25), it moves from base-generated position to CP specifier position like overt wh-movement:

(25) Wh-drop question in children's languages and adult ASL



The second question is why wh-drop rarely occurs in child Japanese. In other words, child Japanese chooses the parametric value [- null wh]. We propose that child Japanese does not allow a null wh-operator due to a property of Japanese wh-words.

Tsai (1994), among others, proposes that the structures of wh-questions in those languages are shown in (26):

- (26) a. English type : $[{}_{CP} [{}_{PP/DP} \text{wh}(x)\text{-Op}_{x[Q]}]_k [{}_{IP} \dots t_k \dots]]$
 b. Japanese type : $[{}_{CP} \text{Op}_{x[Q]} [{}_{IP} \dots [{}_{PP/DP} t_x [\dots \text{wh}(x) \dots] \dots]]$
 c. Chinese type : $[{}_{CP} \text{Op}_{x[Q]} [{}_{IP} \dots \text{wh}(x) \dots]]$

In English, as shown in (26a), the operator is not separable from the wh-word itself, and thus the whole wh-phrase has to move to the CP specifier position for feature-checking. In contrast, in Japanese, the operator is inserted in the DP specifier, and it is separated from the wh-word itself. Therefore a wh-phrase does not move and only the null operator moves from the DP specifier position to the CP specifier position for feature-checking. In Chinese, the null operator is inserted in the CP specifier position, hence it is separated from the wh-word itself, and neither the null operator or the wh-word moves.

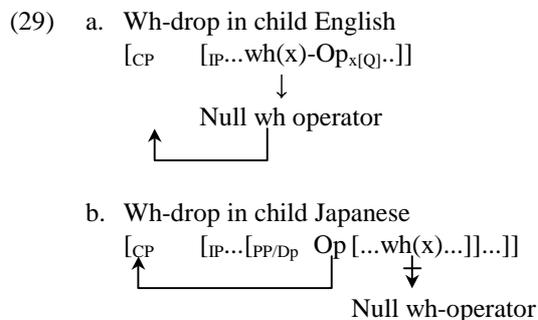
Based on his proposal, the generalization in (27) can be made:

- (27) a. In languages where wh-movement occurs overtly, such as English, a wh-word itself is not separable from an operator.
 b. In languages where wh-movement does not occur overtly, such as Japanese and Chinese, a wh-word is separated from an operator.

Based on this generalization, I propose the following:

- (28) a. In languages where wh-movement occurs overtly, such as in English,
 a. wh-word is not separable from an operator.
 → Thus children can use the null wh operator instead of an overt wh-word, and wh-drop occurs.
 b. In languages where wh-movement does not occur overtly, such as in Japanese, a wh-word is separated from an operator. In other words, a wh-word itself is not an operator.
 → Thus children do not use the null wh operator instead of an overt wh-word and as a result, wh-drop does not occur.

More specifically, let us consider English and Japanese schematically in (29):



In English, wh-movement occurs overtly, and an operator is not separable from a wh-word itself. Thus, as shown in (29a), an overt wh-word, i.e. overt wh-operator, can be replaced by a null wh operator in child English and it moves to the CP specifier position. As a result, wh-drop occurs in child English.

In Japanese, however, wh-movement does not occur overtly, and an operator is separated from a wh-word. A wh-word itself is not an operator. Therefore children do not replace an overt wh-word by the null wh operator as shown in (29b), and wh-drop does not occur in child Japanese.

The occurrence of wh-drop is summarized in Table 9:

Table 9:

Types of wh-movement	Obligatory overt wh-movement	Optional overt wh-movement	No overt wh-movement
Child Languages	English, Swedish, Dutch, German, Spanish	French, (adult) ASL	Japanese
The occurrence of wh-drop	O	O	X

One problem with this analysis of wh-drop in child Japanese is that certain adjunct wh-words such as ‘why’ in Japanese are said to be an operator based on the fact that island-effects are observed with the wh-word. This fact is also observed in Chinese. This is problematic for my analysis, since it predicts that wh-drop should occur with the wh-word ‘why’ in child Japanese. Although we have seen in section 2.4 that wh-drop occurred with ‘when’ and ‘why’ only a few times in the experiment of child Japanese, I leave this matter open for a future research.

The last question is why wh-drop occurs only in some child languages and adult ASL, but not in adult spoken languages. I suggest that the effect of an economy condition or a pragmatic principle such as the principle of least effort in (30) is stronger in child languages and adult ASL than in adult spoken languages.¹

¹ Rizzi (2000) tries to explain the null subject phenomenon in finite clauses in child speech by

- (30) The principle of least effort (Haiman 1983)
Delete or shorten linguistic expressions which convey the information that is already known.

In the course of language acquisition, it is possible to assume that the effect of the principle of least effort or an economy condition is stronger than in adult spoken languages and that children prefer phonologically shorter expressions. Therefore null *wh* operator is used when it is available and *wh*-drop occurs.

Also in adult ASL, there is a plausible reason to suppose that the effect of the principle of least effort is stronger than in spoken languages. According to Diane Lillo-Martin (p.c.), ASL signers try to make sentences shorter because signing manually takes longer than speaking.

We need to investigate further the more detailed contents of the principle of least effort or an economy condition and how it applies in the course of language acquisition and in languages like ASL which have a different modality from spoken languages.

Acknowledgments

This paper was presented at CONSOLE 9 held at Lund University, Sweden, on December 9, 2000. I thank the audience of CONSOLE 9 for their valuable comments. I would also like to thank Noriko Terazu Imanishi, Barbara Lust, Yukio Otsu, Tetsuya Sano, Yasuhiro Shirai and John Whitman for their valuable comments on the earlier versions of this paper. All remaining errors are my own.

References

- Brown, R. & C. Fraser. (1963). The acquisition of syntax. Cofer, C. & B. Musgrave (eds.), *Verbal behaviour and learning: Problems and processes*. McGraw-Hill Book Company, Inc, New York.
- Crain, S. & D. Lillo-Martin. (1999). *An introduction to linguistic theory and language acquisition*. Blackwell, Malden, MA.

proposing that an economy condition in (i) prevails in the course of language acquisition :

- (i) *Structural Economy* (Rizzi 2000)

Use the minimum of structure consistent with well-formedness constraints.

According to Rizzi, root clauses are CPs for adults, but children generate truncated root clauses, IPs, due to structural economy. When the root clause is IP, the empty category, i.e. a null subject, does not have an identification requirement if it is in the IP specifier because it is in a position which is not c-commanded by any other category, and thus a null subject occurs.

It seems that structural economy and the principle of least effort both have something in common since they both try to explain why children prefer phonologically shorter expressions and allow null elements which are not allowed in adult speech. Although structural economy is a grammatical principle and the principle of least effort is a pragmatic principle, it might be possible to make the two principles into one economy principle.

- Felix, S. (1980). Cognition and language development: A German child's acquisition of question words. Nehls, D. (ed.), *Studies in language acquisition*. Gross, Heidelberg, pp.91-109.
- Gretsch, P. (1999). Are wh-elements really optional in early question acquisition? The case of wh-drop against focal ellipsis. Handout presented at GALA.
- Guillaume, P. (1927). Le développement des éléments formels dans le langage de l'enfant. *Journal de Psychologie* 24, pp. 203-229. [translated as The development of formal elements in the child's speech. Ferguson, C. & D. Slobin (eds.), *Studies of child language development*. Holt and Winston, New York, pp. 240-251.]
- Haiman, J. (1983). Iconic and economic motivation. *Language* 59, pp. 781-819.
- Hernández-Pina, F. (1984). *Teorías psicolingüísticas y su aplicación a la adquisición del español como lengua materna*. Siglo XXI, Madrid.
- Kampen, J. V. (1997). *First steps in Wh-movement*. Eburon P&L, Delft.
- Lange, S. & K. Larsson. (1977). Studier i det tidiga barnspråkets grammatik. PM nr 11. Projektet Barnspråksyntax. Stockholms Universitet.
- MacWhinney, B. (1995). *The CHILDES database: Tools for analyzing talk, the 2nd edition*. Lawrence Erlbaum Associates, Hillsdale, New Jersey.
- Neidle, C., J. Kegl, D. MacLaughlin, B. Bahan, & R. G. Lee. (2000). *The syntax of American Sign Language: Functional categories and hierarchical structure*. MIT Press, Cambridge, MA.
- Oshima-Takane, Y. & B. MacWhinney. (1995). CHILDES manual for Japanese. Ms, McGill University, Montréal.
- Pérez-Leroux, A. T. (1993). *Empty categories and the acquisition of Wh-movement*, Diss, University of Massachusetts, Amherst.
- Petronio, K. & D. Lillo-Martin. (1997). Wh-movement and the position of Spec CP: Evidence from American Sign Language. *Language* 73, pp. 18-57.
- Radford, A. (1990). *Syntactic theory and the acquisition of English syntax*. Basil Blackwell Ltd, Cambridge, MA.
- Rizzi, L.(2000). Remarks on early null subjects. Friedemann, M. & L. Rizzi (eds.), *The acquisition of syntax*. Longman, London.
- Santelmann, L. (1995). *The acquisition of verb second grammar in child Swedish*. Diss, Cornell University.
- Santelmann, L. (1997). Wh-less questions in early Swedish: An argument for continuity in language development. Somashekar, S., K. Yamakoshi, M. Blume & C. Foley (eds.), *Cornell Working Papers in Linguistics* 15, pp. 217-253.
- Söderbergh, R.. (1975). Projektet barnspråksyntax. (P)reprint no 6, Project Child Language Syntax. Stockholms Universitet, Institutionen för nordiska språk.
- Tsai, W.-D. (1994). *On economizing the theory of A-bar dependencies*. Diss, MIT, Cambridge, MA.
- Tracy, R. (1991). *Sprachliche strukturentwicklung: Linguistische und kognitions-psychologische aspekte einer theorie des erstspracherwerb*. Narr, Tübingen.
- Wode, H. (1975). Some stages in the acquisition of questions by monolingual children. *Word* 27 (*Child Language* 1975), pp. 261-310.
- Yamakoshi, K. (1999). The acquisition of Wh-questions: Wh-drop in Swedish, Dutch, German, French, Spanish, English and Japanese. Greenhill, A., H. Littlefield & C. Tano (eds.), *Proceedings of Boston University Conference on Language Acquisition* 23, pp. 720-731.