Cornell Working Papers in Linguistics

Volume 11

Edited by
Edward J. Rubin and Michael Bernstein

Cornell University
Department of Modern Languages and Linguistics
Ithaca 1993
Orders and inquiries should be sent to:

DMLL Publications
Morrill Hall
Cornell University
Ithaca, NY 14853

books@plab.dmll.cornell.edu

The price of this volume is $12.00. For shipping charges and other ordering information, please see the Dissertation Abstracts section at the end of the volume.
Acknowledgments

First and foremost, we would like to thank the authors for their papers and their patience. We would also like to thank the reviewers for their vital participation in the process of putting out a quality Working Papers volume.

Review Committee:

John Bailyn
Michael Bernstein
Wayles Browne
Laurent Dekydtspotter
Molly Diesing
Jim Gair
Tamar I. Kaplan
Yafei Li

Sally McConnell-Ginet
Carol Rosen
Edward Rubin
Chioko Takahashi
Almeida Jacqueline Toribio
Linda Waugh
John Whitman
Deborah Yeager

Many thanks to Deborah Yeager, Tamar I. Kaplan, and Eric Hedman for their invaluable assistance in the production of this volume, and to all around the department who have offered advice and suggestions. Finally, thanks to the Department of Modern Languages and Linguistics at Cornell University for their support.
## Contents

Isabella Barbier  
**On the Syntax of Dutch er** ................................................................. 1

Laurent P. Dekydtspotter  
**Ne que and the Theory of Focus** ......................................................... 18

Natàlia Díaz-Insensé  
**Extraction from DP in Catalan and Strong Crossover** ......................... 39

Ruriko Kawashima  
**The Structure of Noun Phrases: Arguments for Quantifier Phrase and Number Phrase** ................................................................. 56

Ignazio M. Mirto  
**Ergativity in Malagasy** ........................................................................ 73

Erika Mitchell  
**VP-fronting, Do-Support and Extended IP in English** ......................... 96

Takashi Nakajima  
**Syntactic Analysis of the Light Verb Construction** .............................. 125

Almeida Jacqueline Toribio  
**Lexical Subjects in Finite and Non-Finite Clauses** .............................. 149

Deborah Yeager  
**The Position of Quantifiers in Old English Nominals** .......................... 179

**Abstracts of recently published dissertations** ........................................ 212
On the Syntax of Dutch *er*

Isabella Barbier
Cornell University

1. Introduction

In this paper I investigate the syntactic conditions on the appearance of Dutch *er* in presentational sentences, as in (1-4).

(1) Er lachte niemand.¹
There laughed nobody
‘Nobody laughed.’

(2) Er valt sneeuw.
There falls snow
‘Snow is falling.’

(3) Er heeft iemand een vos gezien.
There has somebody a fox seen
‘Somebody has seen a fox.’

(4) Er werd tot diep in de nacht gedanst.
There was deep into the night danced
‘There was dancing till deep into the night.’

There exists some similarity between the distribution of Dutch *er* and English *there* in that both *er* and *there* appear only if the subject is indefinite, as shown in (5-6).

(5) Er loopt een jongen in de tuin.
There walks a boy in the garden
‘There is a boy walking in the garden.’

(6) *Er loopt de jongen in de tuin.
There walks the boy in the garden
‘There is the boy walking in the garden.’

¹ I would like to thank Wayne Harbert and two anonymous reviewers for their comments.

¹ These examples are taken from Hoekstra (1991).
In Dutch, *er* also appears in sentences with no visible subject at all,

(7) Er werd hard gelachen.
    There was loudly laughed
    ‘There was loud laughing.’

Dutch also differs from English in that the occurrence of *er* is not dependent upon the choice of the verb. In English, the appearance of *there* is restricted to unaccusative predicates. In Dutch, in addition to unaccusative predicates, both unergative and transitive\(^2\) predicates are possible with *er*, as shown in (8-10).

(8) Er gebeuren rare dingen in dat huis. (unaccusative)
    There happen strange things in that house
    ‘Strange things are going on in that house.’

(9) Er heeft iemand getelefoneerd. (unergative)
    There has somebody telephoned
    ‘Somebody telephoned.’

(10) Er heeft niemand iets gekocht. (transitive)
    There has nobody something bought
    ‘Nobody bought anything.’

Both the status of *er* and the conditions under which it must appear in the above sentences has been a matter of debate. On the one hand, it has been regarded as an expletive in Spec IP, analogous to English *there*. On the other hand, it has been regarded as a clitic attached to a functional head \(X^0\). Under the standard analysis of Dutch (e.g. den Besten 1990), \(X^0\) is taken to be \(C^0\), since Dutch is held to be INFL-final. In this paper I show that neither of these accounts is correct. Instead, I will argue that *er* is a clitic hosted by the head of a head-initial functional projection lower than \(C^0\). The clitic is base-generated in a proclitic position preceding \(I^0\), but can move to an enclitic position following the higher functional head \(C^0\) by head to head movement. I argue that *er* is required by licensing theory to license the content of Spec IP by Spec-head agreement when it is *pro*. If

\(^{2}\) There appears to be an indefiniteness requirement both on the subject and the object (Bennis 1986).

(i) ?? Er heeft iemand het gekocht.
    There has somebody it bought
    ‘Somebody bought it.’
Spec IP is lexically filled, er can still appear since it is apparently freely generated.

2. Evidence against previous analyses of er

In this section I present some evidence both against the proposal that er is an expletive in Spec IP (e.g. Hoekstra 1984) and against the one that er is a clitic attached to C⁰ (e.g. den Besten 1990).

First it should be pointed out that, while in all the examples given above, er precedes the indefinite subject (if there is one), it is also perfectly possible for the subject to precede er, as shown in (11-13).

(11) Rare dingen gebeuren er in dat huis.
    Strange things happen there in that house
    'Strange things are going on in that house.'

(12) Iemand heeft er getelefoneerd.
    Somebody has there telephoned
    'Somebody telephoned.'

(13) Niemand heeft er iets gekocht.
    Nobody has there something bought
    'Nobody bought anything.'

The relevant evidence against er as an expletive in Spec IP or as a clitic attached to C⁰ is provided by the possibility of this type of alternation in embedded sentences, as in (14-15).

(14) ...als er niemand een boek kocht.
    if there nobody a book bought
    '...if nobody bought a book.'

(15) ...als niemand er een boek kocht.
    if nobody there a book bought.
    '...if nobody bought a book.'

The possibility of the subject niemand 'nobody' appearing before er in the embedded clauses as in (15) suggests that Dutch er cannot be an expletive subject occupying the Spec IP position since that position is presumably filled by the subject NP.³

---

³ One could possibly argue that the subject NP which precedes er in embedded clauses occupies a topic adjunct-position. There seems to be no
Nor can *er occupy a clitic position immediately after C0 since such a configuration does not leave any position for the subject NP between C0 and the clitic, as in (15).

In the current literature (e.g. Kayne 1991) it is assumed that clitics are hosted by a functional head X0. Under the standard analysis of Dutch as INFL final (e.g. den Besten 1990), no such functional head below C0 is available.

Recently, however, this standard analysis of Dutch, has been challenged by Cardinaletti and Roberts (1991), Travis (1991) and Zwart (1991). They argue that in the Germanic languages, there is some head-initial functional projection below C0. Most of their evidence is drawn from the behavior of clitics in these languages. For example, Zwart (1991) argues that the fact that Dutch unstressed object pronouns obligatorily occur immediately to the right of the subject, as shown in (16-18), can be easily explained if they are clitics.

(16) ...dat Jan ’r gisteren gekust heeft.
    that John her yesterday kissed has
    ‘...that John kissed her yesterday.’

(17) *...dat Jan gisteren ’r gekust heeft.
    that John yesterday her kissed has

agreement in the literature as to whether this kind of topicalization is possible or not. According to Perlmutter and Zaenen (1984), it is not possible:

(i) *Hij zei dat de hele tijd er twee beeldjes op de tafel stonden.
    He said that the whole time there two statuettes on the table stood
    ‘He said that the whole time there were two statuettes standing
    on the table.’
    (Perlmutter and Zaenen, p. 177)

For Bennis on the other hand, "*er does not necessarily occupy the first position in S", as demonstrated in:

(ii) ? ....dat morgen er op straat veel boeken zullen worden verkocht.
    .... that tomorrow there on street many books shall become sold
    ‘.... that many books will be sold on the street tomorrow
    (Bennis, p. 87)

In order to avoid this problem of possible topicalization, I give examples of embedded clauses introduced by the complementizer als ‘if’, which disallow topicalization of any kind.
(18) *...dat ’r Jan gisteren gekust heeft.
    that her John yesterday kissed has

He proposes that Dutch has a functional head position between C₀ and the VP, which he calls INFL. Cardinaletti and Roberts (1991), on the other hand, call this projection AGR₁P. I will continue to call it IP, for convenience. At any rate, my notation translates directly into theirs. What is important for my purpose is the fact that the Spec position of this initial head AGR₁P is the subject position, just as Spec IP is the subject position in my notation. Equally important is their claim that AGR₁, I₀ in my notation, is the host position for clitics. Consequently, I propose that er is an INFL type clitic.

3. Er as a licenser for pro

In the previous section, I have shown that subjects can appear before er in embedded clauses. In some dialects of Dutch, however, this option appears not to be available. It is, according to Bennis (1986, 174) "one of the diagnostic properties of expletive er that within S er appears before the subject, if there is one."

To illustrate this, he gives the following examples:

(19) *dat iemand er loopt.
    that somebody there walks

(20) *dat boeken er te koop zijn.
    that books there for sale are

Notice, however, that both examples are sentences which contain some type of unaccusative predicate. As pointed out above, Dutch differs from English in that the appearance of er is not restricted to unaccusative predicates, but can also occur with transitive and unergative predicates.

Er has, however, a curious distribution with respect to its position after the subject in embedded clauses. A transitive predicate allows the subject to appear before er, as shown in (21, also 15).

(21) Als iemand er een vos gezien heeft...
    If somebody there a fox seen has...
    ‘If somebody has seen a fox...’

Unergative predicates (like telefoneren ‘telephone’) behave like transitives in this respect, as shown in (22-23).
(22) Als er niemand getelefoneerd heeft....
    If there nobody telephoned has
    'If nobody telephoned...'

(23) Als niemand er getelefoneerd heeft...
    If nobody there telephoned has
    'If nobody telephoned...'

As in Bennis' examples, however, an unaccusative predicate (like gebeuren
'happen' as in (24-25) does not allow the subject to appear before er in
embedded clauses.

(24) Als er rare dingen gebeurd zijn...
    If there strange things happened are
    'if strange things happened...'

(25) *Als rare dingen er gebeurd zijn...
    If strange things there happened are

Thus, the judgments depend on verb classes. On the one side, there are
the unaccusative verbs and on the other unergatives and transitives.

The fact that the argument of an unaccusative cannot precede er in
embedded clauses suggests that it cannot appear in Spec IP. The
Extended Projection Principle, however, requires all clauses to have
subjects. Therefore, if Spec IP is not lexically filled, it must be filled by pro.
I propose that Spec IP of unaccusative predicates in Dutch is filled by
expletive pro.

Following standard theories of pro-drop, I propose that nonthematic
pro must be licensed. In particular, I propose that pro in Spec IP must be
licensed by Spec-head agreement with the functional head io. In Dutch,
however, io by itself is not strong enough and requires the presence of the
clitic er.

---

4 With these comments upon Bennis' examples (19-20), I do not intend to
claim that the subject can appear before er in embedded clauses in all
dialects. It is perfectly possible that in Bennis' dialect this can never
happen, independent of the type of predicate. On the other hand, the fact
that his only two examples involve unaccusative predicates still leaves
open the possibility that in his dialect this alternation is possible with
other predicates.
4. The absence of Unaccusative Movement in Dutch

In the previous section I have proposed that the argument of an unaccusative never precedes *er* in embedded clauses because it cannot move into Spec IP. One obvious question that arises is how these arguments obtain their nominative case. In the literature several mechanisms for extending the domain of nominative case to in situ objects have been proposed. Harbert and Toribio (1991) propose that nominative case is assigned to objects through coindexation with expletives in Spec IP. Den Besten (1985, 1990) proposes that nominative case is assigned by Chain-government down into VP from INFL.\(^5\) Presumably, where this mechanism is available, no movement to Spec IP is necessary. Considerations of economy might then dictate that no movement can take place.

Clearly, the principle of economy which prevents the unaccusative object from moving to Spec IP, does not prevent subjects of transitive and unergative predicates from moving there. The question arises as to the relevant aspect in which unaccusative objects and subjects of transitive and unergative predicates differ. I would like to propose that this relevant aspect is the governing domain to which they belong. A principle of economy would then state that it is uneconomical to change the government relationships. Moving subject NPs from transitive and unergative predicates to Spec IP would not change the government relationship between I\(^0\) and the relevant NPs since they would be

\(^5\) In his (1990) paper den Besten proposes that Chain government is universally available for I-final SOV languages, including Dutch. It is not clear why den Besten requires I\(^0\) to be final. The only indication is his comment (p. 42) that government might be further restricted by adding unidirectionality of government to the definition. An anonymous reviewer suggests that the reason might be the position of the tense-marked verbal element in Dutch since it is not clear how Tense marking gets onto the sentence-final verb. In other work (Barbier 1993) I argue that Dutch is like English in that it lacks V\(^0\) to I\(^0\) movement in the syntax.
governed by \( I^0 \) both in their base-generated position and in their landing site. Unaccusative objects on the other hand would leave the governing domain of \( V^0 \) to become in the governing domain of \( I^0 \).

5. The unaccusative data

In this section I discuss the distribution of the unaccusative data in some more detail. Recall that unaccusative predicates do not allow the unaccusative object NP to appear before \( er \) in embedded clauses, as shown in (27) below. In matrix clauses on the other hand, the unaccusative object NP can precede \( er \). In this case the presence of \( er \) is required, as shown in (28).

(27) Als rare dingen *er /*\( \emptyset \) gebeuren...
   If strange things there happen
   'If strange things are going on...'

(28) Rare dingen gebeuren er /*\( \emptyset \).
   Strange things happen there
   'Strange things are going on.'

In embedded clauses \( er \) is obligatory and must precede the unaccusative object NP, as shown in (29). In matrix clauses, the unaccusative object NP can precede \( er \). In this case too, \( er \) is obligatory.

(29) Als er /*\( \emptyset \) rare dingen gebeuren...
   If there strange things happen
   'If strange things are going on...'

(30) Er /*\( \emptyset \) gebeuren rare dingen.
   There happen strange things
   'Strange things are going on.'

With the assumptions outlined in the previous section, the unaccusative data can now be explained.

Unaccusative object NPs can not appear before \( er \) in embedded clauses, as shown in (27), because unaccusative object NPs can never move to Spec IP.

Topicalization of the unaccusative object NP in matrix clauses is possible, as shown in (28) above. The unaccusative object NP occurs in the topicalization position Spec CP. However, nominative case cannot be assigned in Spec CP. Nominative case must be assigned to the trace in the VP-internal position. To satisfy the Extended Projection Principle, Spec IP
is filled by pro and the presence of er is required to license pro. Notice that this analysis implies that the unaccusative object can not only not have Spec IP as a landing-site for movement, but that it doesn’t even move through Spec IP. If the unaccusative object moved through Spec IP, it would leave a trace which presumably would satisfy the ECP.

\[(31=28)\]

\[
\begin{array}{c}
\text{CP} \\
\text{rare dingen}_1 \\
\text{C'} \\
\text{C}_0 \\
\text{IP} \\
\text{gebeuren}_4 \\
\text{pro}_1 \\
\text{er-I}_0 \\
\text{VP} \\
\text{Spec} \\
\text{V'} \\
\text{NP} \\
\text{t}_i \\
\text{V} \\
\text{t}_j
\end{array}
\]

Notice that in these topicalization structures the clitic er follows the verb gebeuren. This is not the order we would expect if the verb moves through I\(^0\) on its way to C\(^0\) because it is commonly assumed that once a clitic adjoins to a head, it cannot be separated from this head (Kayne 1991).\(^6\)

Recent work by Ian Roberts (1991), however, has shown that this assumption is controversial. He proposes that “excorporation” is possible. Excorporation is successive cyclic movement of a head which first incorporates into another governing head, but then moves out of the head, leaving something stranded.

This same effect also obtains in questions, as shown in (32-33).

(32) Waar gebeuren er rare dingen?
    Where happen there strange things
    ‘Where are strange things going on?’

(33) Gebeuren er rare dingen?
    Happen there strange things
    ‘Are strange things going on?’

\(^6\) An anonymous reviewer suggested that this clitic-verb order might be due to the process of excorporation. Another possible explanation comes from recent work by Roberts (1992) and Cardinaletti & Roberts (1991). They argue that in the Germanic languages, the verb must “skip” I\(^0\) whenever Spec CP is filled and the inflected verb is thus clearly in C\(^0\).
In embedded clauses, *er* is obligatory and must precede the unaccusative object NP, as shown in (29=34). Since there is no unaccusative movement in Dutch, the unaccusative object NP remains in the VP and receives nominative case in situ. As a result Spec IP remains empty and is filled by *pro*. *Er* must obligatorily appear to license *pro*.

\[(34=29)\]

\[
\begin{array}{c}
\text{CP} \\
\text{C'} \\
\text{C}_0 \\
\text{als} \\
\text{pro} \\
er-\text{I}_0 \\
\text{VP} \\
\text{Spec} \\
\text{V'} \\
\text{NP} \\
r\text{rare dingen} \\
\text{gebeuren}
\end{array}
\]

To explain the obligatory presence of *er*, preceding the unaccusative object NP in non-topicalized matrix clauses, as shown in (35=30), I propose, following Travis (1991), that Dutch "subject"-initial main clauses are IPs, with *pro* in Spec IP, *er* cliticized onto I\(^0\) and the object NP in situ.

\[(35=30)\]

\[
\begin{array}{c}
\text{IP} \\
\text{pro} \\
\text{I'} \\
\text{I}_0 \\
\text{VP} \\
er-\text{gebeuren} \\
\text{Spec} \\
\text{V'} \\
\text{NP} \\
r\text{rare dingen} \\
t_j
\end{array}
\]

I prefer this analysis of non-subject initial matrix clauses as IPs to the alternative analysis (e.g. Vikner & Schwartz (1992) that Dutch "subject"-initial clauses are CPs. Under the latter analysis, it would be difficult to explain why *er* precedes the verb in these structures. Indeed, the explanation would require saying that in this case no exorcipation took place, in contrast to what happens in questions and topicalizations.
6. The transitive data

Let us now turn to the distribution of the transitive data.

(37) Er / *Ø koopt een man een boek.
    There buys a man a book
    'A man is buying a book.'

For structure (37), we propose an analysis analogous to the one proposed
for unaccusative predicates, since the clitic er is obligatory in this
structure. The subject NP remains in situ and Spec IP is filled by pro. Er is
necessary to license pro and occupies a proclitic position preceding I0.

(38=37)

(39) Een man koopt er / Ø een boek.
    A man buys there a book
    'A man is buying a book.'

When the subject NP precedes er, as in (39), the presence of er is optional.
I propose that the subject NP moves through Spec IP to Spec CP, leaving a
trace in Spec IP. In this case, \textit{er} is not needed. The fact that it can appear nevertheless suggests that it can be freely generated.\footnote{In fact, in my judgment the presence of \textit{er} is really superfluous in these constructions and seems more a case of "hypercorrection".}

7. Preposed Datives

Den Besten (1985) observes that in unaccusative constructions with preposed datives \textit{er}-insertion is optional in Dutch, as in (41) versus (40).

(40) dat er / *\(\emptyset\) iets raars gebeurd is.
that there something strange happened is
'that something strange happened.'

(41) dat er / \(\emptyset\) Karel iets raars overkomen is
that there Charles something strange happened is
'that something strange happened to Charles'

Since the unaccusative object stays in situ in the VP internal position, the Spec IP position is not filled. This allows the dative to move into Subject position. \textit{Er} is not necessary since there is no \textit{pro} to license, but can apparently be freely generated (cf. den Besten 1985).

\begin{center}
\begin{tikzpicture}
\node{CP}
child{node{C'}
child{node{\(C^0\)}
child{node{IP}
child{node{dat} edge from parent node[swap]{\small{V'}}}
child{node{Karel} edge from parent node[swap]{\small{VP}}}
child{node{Spec}
child{node{NP} edge from parent node[swap]{\small{V}}}
child{node{iets raars} edge from parent node[swap]{\small{overkomen is}}}}}
child{node{\(V'\)}}
}
\end{tikzpicture}
\end{center}

There is, however, a problem with the word-order within the sentence. Notice that in (41) \textit{er} appears before the preposed dative in Spec IP. If, as I have proposed, \textit{er} occupies an INFL proclitic position, we would expect the word-order to be as in (43), where the preposed dative precedes \textit{er}.

(43) dat Karel er / \(\emptyset\) iets raars overkomen is.
that Charles there something strange happened is
'that something strange happened to Charles.'
In the dialect of Dutch in which it is possible to have subjects of transitive and unergative predicates precede *er* in embedded clauses, (43) is a perfectly possible word-order.

I would like to propose that *er* optionally undergoes clitic-climbing from an INFL proclitic position to an C enclitic position. This accounts for the change in word-order.

8. **Locative prepositional phrase**

Another construction in which *er*-insertion is optional is in the context of preposed locatives. Zwart (1991) says:

A mysterious feature of Dutch expletive constructions is that *er* can remain unexpressed if and only if a locative PP is fronted. Thus, there is a clear contrast between [(44)], where a locative PP is fronted, and [(45)], where a temporal adverb is fronted.

(44) In de tuin werd gedanst.
In the garden was danced
‘There was dancing in the garden.’

(45) ??Gisteren werd gedanst.
Yesterday was danced
‘Yesterday there was dancing.’

According to Zwart, the construction is fine again if a locative PP is added to (45).\(^8\)

(45') Gisteren werd in de tuin gedanst.
Yesterday was in the garden danced
‘Yesterday there was dancing in the garden.’

Perhaps significant is the fact that there appears to be a clear preference for constructions without *er* when a locative PP is fronted. Thus, (46) is strange compared to (47) and (48).

(46) ?? In de kast zit er een lijk.
In the closet sits there a body
‘There is a body in the closet.’

---

\(^8\) I do not agree with this judgment about the sentence. I feel that *er* is still needed.
(47) In de kast zit een lijk.
   In the closet sits a body

(48) Er zit een lijk in de kast.
   There sits a body in the closet.

These facts are consistent with preverbal locative constructions in other languages, e.g. English (Toribio 1992), as shown in (49).

(49) On the shelf sat the family portrait.

Toribio proposes that in these constructions, the locative argument first moves into Spec IP and then undergoes subsequent movement to an IP adjoined position. The locative phrase moves into Spec IP to satisfy the Extended Projection Principle, which requires that sentences have subject positions at all syntactic levels.

Toribio shows how Korean provides some evidence for her claim that locatives occupy Spec IP since in this language, locatives may demonstrate both dative and nominative case. Furthermore, the preverbal locatives behave like a subject with respect to raising, as shown in (50).

(50) Down the road appears to be located a market.

These locatives do not pattern completely like other phrases which occupy Spec IP though. For example, they do not behave like subjects with respect to the auxiliary-second pattern of yes-no question and wh-extraction. Thus, Toribio proposes that the locative moves to Spec IP but cannot remain there because their presence violates the case-resistance principle. Therefore, they have to move to an IP adjoined position.

If in Dutch the preverbal locative occupied either Spec IP position or an IP adjoined position, there would be a problem with regard to the position of er. The verb presumably occupies $I^0$ and er cliticizes onto $I^0$. Notice however that er appears on the “wrong” side of $I^0$. It appears on the right of $I^0$, while in all the previous cases it cliticizes to its left.

I propose, therefore, that the preverbal locative moves to Spec CP through Spec IP, leaving a trace there. Thus, Spec IP is filled by a trace. There is no pro and thus no er required to license it. Since it is freely generated, it can appear nevertheless.

9. Prepositional er and quantitative er

Finally, I would like to suggest the possibility of providing a similar analysis to two other instances of “er” in Dutch, as shown in (51-52).
(51) Ik heb met hem er over pro gesproken. (prepositional)
    I have with him there about talked
    'I have talked with him about it.'

(52) Ik heb er gisteren twee pro gekocht. (quantitative)
    I have there yesterday two bought
    'I bought two of them yesterday.'

In these cases too, er is associated with a gap, which I propose is filled by
pro. I would like to claim that the function of er in these cases is similar to
the INFL type er. I note however that while INFL type er can only license
expletive pro, prepositional and quantitative er can identify thematic pro.
Thus, these Dutch facts also bear upon pro-drop theory, viz. the
conditions for identification. In Jaeggli & Safir's (1989) theory the
difference between the two cases can be accounted for in the following
way: in their theory "AGR can identify an empty category as thematic pro
iff the category containing AGR Case-governs the empty category." INFL
type er does not strictly c-command and thus does not Case-govern pro.
Therefore, it can not identify thematic pro. The er in (51) and (52) on the
other hand strictly c-commands and Case-governs pro.

(53)
\[
\text{CP} \\
\text{Spec} \\
\text{C'} \\
\text{C}^0 \\
\text{IP} \\
\text{pro} \\
\text{I'} \\
\text{er-I}^0 \\
\text{VP} \\
\text{Spec} \\
\text{V'} \\
\text{NP} \\
\text{V}
\]

(54)
\[
\text{CP} \\
\text{Spec} \\
\text{PP} \\
\text{Spec} \\
\text{P'} \\
\text{er-P} \\
\text{NP} \\
\text{pro}
\]

---

9 An anonymous reviewer points out that the semantics in these cases
are very different and that it is not at all obvious that they should be given
a unified account. While this is true, these three different uses of er do
share the syntactic fact of being associated with a gap. For this reason, I
believe it is worthwhile to try to find an account which can unify these
three different types of er.
How these facts can be accommodated by any other theory of Identification (e.g. Rizzi 1986), where government is a condition for licensing, is not clear.

10. Conclusion

In this paper, I have argued that *er* is an INFL type clitic. The clitic is base-generated in a proclitic position preceding I^0, but can move to an enclitic position following the higher functional head C^0 by head to head movement. This analysis entails that Dutch IPs are head-initial. Its presence is necessary to license *pro* in Spec IP. If Spec IP is lexically filled, *er* can still appear since it is apparently freely generated. I have also shown that there is no unaccusative movement in Dutch and that unaccusative objects are prevented from appearing in Spec IP by a principle of economy which states that government relationships must be respected. Finally, I have suggested the possibility of providing a similar analysis for two other instances of *er* in Dutch.

References


Ne que and the Theory of Focus

Laurent P. Dekydtspotter
Cornell University

1. Introduction

This paper argues that the French ne que construction, a bipartite phrase with the meaning of only (1) does not reduce to the syntactic LF treatment of focus proposed by Chomsky (1981) or to the purely semantic treatment proposed by Rooth (1985). This paper argues that the properties of the ne que construction follow naturally from the interaction of syntax and semantics, under an analysis to be developed.

(1) Jean n’a vu que Marie.
    Jean NE saw QUE Marie
    ‘Jean only saw MARIE.’

Under the LF treatment of focus (cf. Chomsky 1981), a focally stressed expression must undergo Quantifier Raising. The lower IP is then interpreted as the presupposition, and the adjoined structure as the focus. In the alternative semantic treatment proposed by Rooth (1985), focus makes available in the semantics a set of alternatives, which focus sensitive operators quantify over. Rooth’s analysis captures the fact that the association of only with phonological focus is insensitive to islands, as the lack of effect with the subject island (2) suggests.

(2) John only believes that pictures of LUCIE horrified her.

Rooth’s analysis of phonological focus does not directly carry over to the ne que construction since the latter respects islands (3).

* I would like to thank John Bowers, Gennaro Chierchia, Fred Landman and John Whitman, as well as two anonymous reviewers, who have been of considerable help in the development of this research. Ruriko Kawashima’s (1991) paper on ne que’s Japanese counterpart shika na prompted me to examine the French facts. I have also benefited from the input of Craig Roberts and Peter Culicover. Earlier stages of this research were presented at Cornell University and at the CONSOLE focus workshop at the University of Utrecht.
* Jean ne croit que des photos que de Lucie l'ont horrifiée.
Jean NE believes that pictures QUE of Lucie her horrified
'Jean only believes that pictures of LUCIE horrified her.'

Furthermore, phonological focus is not sensitive to embedding inside tense islands (4); however, the ne que construction (5) is.

(4) John only believes that Peter said that Mary saw LUCIE.

(5) * Jean ne croit que Pierre a dit que Marie a vu que Lucie.
Jean NE believes that Pierre said that Marie saw QUE Lucie
'Jean only believes that Pierre said that Marie saw LUCIE.'

The contrasts (2)-(3) and (4)-(5) between the ne que construction and the association of only with focal stress suggest strongly that movement is involved in the interpretation of the ne que construction. The ne que construction might thus conceivably provide decisive evidence in favor of the scope theory for natural language focus.

2. Ne que and the scope theory of focus

As (5) shows ne and que must typically be in close dependency. This is fully compatible with the hypothesis that the ne que construction relies on Quantifier Raising for its interpretation, since QR is typically clause bound. However, a que-phrase appearing in an embedded subjunctive clause can be construed with respect to matrix ne (6).

(6) Il n'a exigé que vous arrêtiez que les anarchistes.
he NE demanded that you arrest QUE the anarchists
'He only demanded that you arrest the ANARCHISTS.'

This is not damaging to the LF movement hypothesis since the French negative quantifier personne 'no one,' which must also be interpreted with respect to the negative head ne, is found inside subjunctive clauses.

(7) Il n'a exigé que vous arrêtiez personne.
he NE demanded that you arrest no one
'He demanded that you arrest no one.'

Kayne (1984) argues that personne 'no one' must move at LF to the negative head with respect to which it is interpreted (8).

(8) Il n'a [VP personne] [VP exigé [CP que vous arrêtiez tî ]]

[Note: The text is a continuation of the discussion on the ne que construction and its implications for the scope theory of focus in natural language, including examples of sentences with ne que and the movement of negative quantifiers. The text continues with further analysis and examples related to the topic.]
The LF movement hypothesis accounts for the fact that *personne* ‘no one’ may not occur in subject position (9), since an ECP violation will be incurred.

(9) * Il n’ a exigé que personne soit arrêté he NE demanded that no one be arrested ‘He demanded that no one be arrested’

Under the LF treatment, the interpretation of *ne que* is derived from LF representations derived by QR. The *que*-phrase is treated as an indefinite quantifier that must be interpreted under the scope of the negative head *ne*. This account assumes of course that QR is obligatory. QR creates the tripartite structure quantifier, restriction and nuclear scope of natural language quantification.

### 2.1. An LF movement interpretation for *ne que*

I assume here, for the sake of argument, the Heim-Kamp treatment of indefinites developed in Diesing (1990). Heim (1988) proposes to treat indefinites as variables that become bound by virtue of a default rule of existential closure. Diesing proposes that a rule of existential closure applies at the VP level (cf. Diesing 1990).

Under the LF movement hypothesis, the sentence in (10) is thus interpreted with respect to an LF in (11).

(10) Il n’est arrivé que Jean.
    exp. NE is arrived QUE jean
    ‘Only Jean arrived.’

(11) Il n’est [VP [que Jean]i [VP arrivé ti]]    (11) = LF of (10)

The interpretation based on the LF in (11) proceeds compositionally as in (12). The phrase *que Jean* is interpreted as an indefinite ranging over the set of individuals different from Jean, [λP x ≠ i ∩ P (x)] (cf. Azoulay-Vincente 1988). The lower VP denotes the set of individuals that arrived [ λx_1 arrive (x_1) ]. Function application spells out the denotation of the higher VP node [ x ≠ i ∩ arrive (x) ]. The denotation of the higher VP node is then closed by a rule of existential closure (cf. Diesing 1992). Closure can occur at the level of the lower VP node, but then the resulting structure is ill-formed, the variable being left unbound. Since the existentially closed expression is in the scope of negation, the resulting formula yields an interpretation equivalent to that of *only*. 
(12) \[\text{[que Jean]}_i \Rightarrow \lambda P \ [x \neq j \cap P (x)]\]
    
    \[\text{[VP arrivé} t_i \Rightarrow \lambda x_i \ [\text{arrive} (x_i)]\]
    
    \[\text{[VP [que Jean]}_i [\text{VP arrivé} t_i] \Rightarrow\]
    
    \[\lambda P \ [x \neq j \cap P (x)] (\lambda x_i \ [\text{arrive} (x_i)])\]
    
    \[\Rightarrow \lambda -\text{conversion}\]
    
    \[\Rightarrow \text{[x \neq j \cap \text{arrive'} (x)] \ (x)}\]
    
    \[\Rightarrow \lambda -\text{conversion}\]
    
    \[\text{Existential closure}\]
    
    \[\text{[VP [que Jean]}_i [\text{VP arrivé} t_i] \Rightarrow \exists x \ [x \neq j \cap \text{arrive'} (x)]\]
    
    \[\text{Under negation}\]
    
    \[\text{[NegP ne [VP [que Jean]}_i [\text{VP arrivé} t_i] \Rightarrow \neg \exists x \ [x \neq j \cap \text{arrive'} (x)]\]

The interpretation of (11) specified in (12) is precisely equivalent to that of *only*. (12) can be paraphrased as ‘it is not the case that there is an individual other than Jean that arrived,’ which is equivalent to the statement that ‘only Jean arrived.’ This translation procedure can be generalized for any *que*-phrase (13).

(13) \[\text{[NegP ne [VP [que XP]}_i [\text{VP \beta} t_i] \Rightarrow \neg \exists \gamma [\gamma \neq XP \cap \text{Apply(\beta\gamma)}]\]

where \text{Apply (\beta\gamma) = \beta(\gamma) or (\gamma)\beta, whichever is well-formed}\]

This LF treatment is conceptually attractive because it is compositional and because the logical syntax that makes the interpretation of *ne que* precise under the LF treatment is a direct map of the syntax of French.

2.2. LF movements and the distribution of *ne que*

The LF analysis predicts that the *ne que* construction is dependent on LF movement. In particular, it is predicted that *que* cannot attach to a phrase that may not undergo movement. The phrases for which QR is not available are predicted not to associate with *que*. Interestingly, in the subjunctive the *ne que* construction is possible with NPs (14), but ungrammatical with VPs (15).

(14) Jean ne veut que Pierre boive que de l’eau.
    
    Jean NE wants that Pierre drink QUE water
    
    ‘Jean only wants Pierre to drink WATER.’

(15) * Jean ne voulait que Pierre ait que bu de l’eau.
    
    Jean NE wanted that Pierre had QUE drunk water
    
    ‘Jean only wanted Pierre to DRINK water.’

Under the LF movement analysis, the contrast between (14) and (15) can be tied to the contrast in (16) and (17). (16) shows that the NP object may
undergo movement. However, the past participle in French may not undergo overt movement (17), and hence presumably cannot move covertly either. The strong ungrammaticality in (17) suggests an ECP effect, with similar consequences for overt and covert movements.

(16)  De l’eau, Jean voulait que Pierre ait bu, pas du vin
water  Jean wanted that Pierre had drunk, not wine
‘Water, Jean wanted Pierre to drink, not wine’

(17)  * Bu de l’eau, Jean voulait que Pierre ait
drunk  water  Jean wanted that Pierre had
‘Drink water, Jean wanted for Pierre to’

It follows naturally from the LF movement account that there should be a correlation between (14), (16) and (15), (17), since the pattern of grammaticality in both cases follows from the possibility of movement.

2.3. Problems

However, this interesting connection between the distribution of ne que and the possibility of movement cannot be maintained in all environments. For instance, que can associate with past participles in matrix clauses (18), even though they cannot undergo overt (or covert) movement (19).

(18) Jean n’a que bu de la bière.
Jean NE has QUE drunk beer
‘Jean only DRANK beer.’

(19) * Bu de la bière, Jean a.
drunk beer  Jean has
‘Drink beer Jean did.’

This is true not only of matrix clause participles, but also of infinitival verbs. Thus in particular, que can associate with an infinitival predicate (20) even though the overt movement of the predicate is not available (21).

(20) Jean ne veut que boire de l’eau.
Jean NE wants QUE drink water
‘Jean only wants to DRINK water.’

(21) * Boire de l’eau, Jean veut.
drink water  Jean wants
‘Drink water, Jean wants to.’
Hence, the link that the LF movement analysis establishes between (14), (16) and (15), (17) finds itself invalidated by the data in (18-21). The fact that the connection between the availability of movement and the distribution of the *ne que* construction cannot be maintained in all environments casts serious doubts on the well-foundedness of the LF treatment.

This is, however, not the only difficulty that the LF movement account is faced with. Quantifier Raising is generally sensitive to tense islands. Data like (22) are reminiscent of the tense island condition. However, (23) is perfectly grammatical in the context of a tense clause.

(22) * Jean ne croit que Pierre a dit que Marie a vu que Lucie.  
Jean NE believes that Pierre said that Marie saw QUE Lucie  
‘Jean only believes that Pierre said that Marie saw LUCIE.’

(23) Jean ne croit que Marie a vu que Lucie.  
Jean NE believes that Marie saw QUE Lucie  
‘Jean only believes that Marie saw LUCIE.’

The contrast between (22) and (23) suggests that the *ne que* construction exhibits an asymmetry with respect to levels of embedding inside tense clauses. Namely, a *que*-phrase can only be located in a tensed subordinate clause immediately under the matrix. Subjunctive clauses also exhibit this distribution, as the contrast between (24) and (25) shows.

(24) * Il n’a exigé qu’elle ordonne que nous lisions qu’un roman.  
he NE demanded that she command that we read QUE a novel  
‘He only demanded that she command that we read a NOVEL.’

(25) Il n’a exigé que vous arrêtiez que les anarchistes.  
he NE demanded that you arrest QUE the anarchists  
‘He only demanded that you arrest the ANARCHISTS.’

This contrast between levels of embedding inside tense clauses is problematic for the LF movement theory because if movement through Comp is possible in (23) and (25), there is no principled reason why movement through Comp should be unavailable in (22) and (24). Hence, the LF movement account of *que*-phrases is unable to reconcile these contradictory data. This suggests that a syntactic generalization is being missed.

Semantically, the LF movement account treats *que*-phrases as indefinites. Indefinites, however, can have their interpretation affected by the presence of adverbs of quantification (cf. Diesing 1990). Hence (26a)
favors the reading where the adverb of quantification overrides the existential closure and quantifies over the indefinites (cf. Diesing 1992); namely, (26a) is interpreted as (26b).

(26) a. Un professeur aime habituellement un devoir bien écrit.
   a professor likes usually a paper well written
   'A professor usually likes a well written paper.'

   b. Gen x,y [ professor (x) \cap well written paper (y) ] like (x,y)

The LF-movement analysis therefore predicts that adverbs of quantification can also interact with the interpretation of que-phrases since they are treated as indefinites. However, this prediction is disconfirmed by the data (27). The sentence in (27) can only have the reading in (28), not the reading in (29).

(27) Un professeur n'aime habituellement que la lecture.
   a professor NE likes usually QUE reading
   'A professor usually only likes reading.'

(28) Gen x [ professor (x) ] \neg \exists y [ y \neq reading' \cap like (x,y) ]

(29) * Gen x,y [ professor (x) \cap y \neq reading' ] \neg like (x,y)

(28) expresses that for most professors it is not the case that they like something unless it is reading. (29) expresses the unavailable meaning that most professors are such that it is not the case that they like most things different from reading.

It is also important to note that the ne que construction associates with phonological focus (30) (cf. Kawashima 1991).

(30) Il ne se souvient que du magasin où Pierre a acheté ASPECTS
   he NE remembers QUE the shop where Pierre bought ASPECTS
   'He only remembers the shop where Pierre bought ASPECTS'

Thus (30) quantifies over stores where Pierre bought something or other. This ability of ne que to associate with phonologically stressed expressions must be accounted for under any adequate treatment of the construction.

All in all, the ne que construction has very different properties from phonological focus, as movement diagnostics show. However, major syntactic and semantic properties of the ne que construction are not adequately explained by the Quantifier Raising approach. This approach treats que phrases as indefinite quantifiers undergoing QR to a VP adjoined
position, where they become bound by VP existential closure (cf. Diesing 1990). This approach encounters two unsurmountable empirical difficulties: one syntactic and one semantic. Syntactically, although there is in some environments a connection between interpretability and the possibility of movement, this connection cannot be maintained in all environments. This is surprising under the QR approach. Semantically, the analysis predicts that que-phrases as indefinites could be bound by adverbs of quantification as typical indefinites are, contrary to facts. This suggests that the LF movement analysis sketched above is seriously flawed.

3. An alternative

I propose that the ne que construction involves a null operator variable structure. This Op is identified in situ by the que-phrase that semantically supplies its restriction. The meaning contributed by [que α] is essentially that of ‘other than ’ (cf. Heim, Lasnik and May 1991, von Fintel (to appear)). [Op [ que α]] thus picks the set of contextually restricted elements that are not α. This null operator must compose with the NegP headed by ne in order for an interpretation to take place. This NegP is treated as a generalized quantifier with semantics close to those of ‘nothing,’ \( \lambda P \neg \exists u P(u) \). I disregard intensionality here. The negative quantifier supplies the quantificational strength of the chain thus created by composition. The interpretation follows by application. The semantics of the construction are the semantics of movement.

For an interpretation to obtain, the negative quantifier and the null operator need to form a chain. Because both members of the chain are base-generated separately, this is achieved by composition. Chain composition requires both C-command and the presence of no barriers (cf. Chomsky (1986)), Chomsky and Lasnik (1991)). Because the Op is identified in situ, operator movement is forced by Full Interpretation whenever barriers intervene between the loci of base-generation of ne and Op, thereby preventing chain composition. However, the movement of Op is subject to locality constraints on null operators: Op may not cross a tensed CP (cf. Stowell 1985). This explains the movement facts that were so intractable under the LF movement accounts. Furthermore, since que-phrases have the semantics not of indefinites but of a lambda abstract, they are expected not to interact with adverbs of quantification.

3.1. A null operator

Azoulay-Vincente (1988) argues that the distribution of que-phrases follows from the presence of an empty category. This explains why que-phrases may not appear in domains that are not head governed, like
subjects (31) and like objects of prepositions (32). French prepositions have been argued not to be proper governors (cf. Kayne 1975).

(31) * Que Jean ne chantera une chanson.
    QUE Jean NE will sing a song
    ‘Only Jean will sing a song.’

(32) * Marie ne parlera à que Jean.
    Marie NE will speak to QUE Jean
    ‘Marie will only speak to JEAN.’

In the subject case, the que-phrase must be post verbal (33), and where a PP is focused, the que must appear outside the prepositional phrase (34).

(33) Ne chantera une chanson que Jean.
    NE will sing a song QUE Jean
    ‘Only Jean will sing a song.’

(34) Marie ne parlera qu’à Jean.
    Marie NE will speak QUE to Jean
    ‘Marie will only speak to JEAN.’

According to my proposal, this EC is a null operator identified in situ by the que-phrase. This null operator forms a chain with the negative phrase headed by ne by chain composition. This makes immediate predictions. The chain created must obey the bijection principle of Koopman and Sportiche (1981). Hence, it is predicted that ne can be part of only one chain. Multiple occurrences of que-phrases are predicted to be impossible (35).

(35) Pierre n’a acheté que des bonbons qu’au marché.
    Pierre NE bought QUE sweets QUE at the market
    ‘Pierre only bought SWEETS at the MARKET.’

It also follows from chain composition that the operator must be C-commanded by the negative quantifier for chain composition to take place (cf. Chomsky (1986), Chomsky and Lasnik (1991)), and that no barriers may intervene. Thus an NP containing a que-phrase cannot appear in subject position (36), (37).

(36) Pierre n’a acheté [ Op1 une photo t1 [ que de Jean ]]
    Pierre NE bought a picture QUE of Jean
    ‘Pierre only bought a picture of JEAN.’
(37) * [Op₁ Une photo t₁ [que de Jean]] n₁’a été achetée
      a picture QUE of Jean NE was bought
      ‘Only a picture of JEAN was bought.’

Chain composition also explains the fact that the construction is severely
degraded when an intervening quantifier blocks chain formation with *ne
(38) (cf. Rizzi (1990) and Chomsky and Lasnik (1991) who reduce
      subjacency and minimality to Economy under the notion of intervention).

(38) * Jean n₁’a beaucoup mangé [Op₁ [ que ec₁ de bonbons ]]
      Jean NE has lots of eaten QUE of sweets
      ‘Jean only ate lots of SWEETS.’

3.2. The asymmetries reconsidered

I proposed that the interpretation of the *ne que construction relies on
syntactic chain composition, a local process. If no barriers intervene, *ne
and Op can compose in situ. If barriers intervene, movement must occur
to allow chain composition. However, Stowell (1985) shows that null
operators are subject to more stringent requirements than overt operators.
Stowell points out that operator movement is grammatical from an
infinitival (39) but ungrammatical across a tensed CP (40).

(39) This language is impossible [Op₁ [ to expect [Scott to tell Greg [ to
      learn t₁ ]]]]

(40) * This language is impossible [Op₁ to say [ that Greg [ will learn t₁ ]]]

The surprising distribution of *ne que with respect to levels of
embedding inside tensed clauses is reduced to Stowell’s generalization
under this analysis. In both (41) and (42) below, barriers prevent in situ
composition, but in (41) null operator movement is licensed so that the
structure can be salvaged. In (42), however, null operator movement is
not licensed, since a tensed CP must be crossed. Hence, no well-formed
derivation that will allow for the interpretation can be achieved.

(41) Jean ne₁ dit [Op₁ qu’il verra t₁ que Lucie], mais il verra Irène aussi
      Jean NE says that he will see QUE Lucie, but he’ll see Irène too
      ‘Jean only says that he will see LUCIE, but he’ll see Irène too.’

(42) * Jean ne₁ dit [Op₁ qu’il croit [CP qu’elle a vu t₁ que Lucie]]
      Jean NE says that he believes that she saw QUE Lucie
      ‘Jean only says that he believes that she saw LUCIE.’
Stowell (1985) argues that a tenseless IP is not a barrier. It follows that a tenseless IP does not block chain composition, and of course chain composition is not blocked in matrix clauses. It therefore follows that the interpretation of *que*-phrases in matrix and infinitivals does not rely on operator movement and consequently does not show movement-related dependencies. Hence the contrast, with respect to *que*-VPs, between embedded tensed clauses (43) and embedded infinitivals (44).

\[(43) \quad \text{* Il n'avait exigé que vous ayez que mangé.}
\quad \text{he NE had demanded that you had QUE eaten}
\quad \text{`He had only demanded that you had EATEN.'}
\]

\[(44) \quad \text{Il ne pense avoir que trop mangé,}
\quad \text{he NE thinks have QUE too much eaten}
\quad \text{`He only thinks that he has EATEN too much,}
\quad \text{mais il a aussi trop bu.}
\quad \text{but he has also too much drunk}
\quad \text{but he has also drunk too much.'}
\]

NPs as cyclic nodes are expected to be opaque domains for chain composition. Thus the construal of a *que*-phrase inside an NP is dependent on operator movement (45). Since operator movement is sensitive to definiteness and to other extractions, *que*-phrases are predicted not to occur inside definite NPs (46) and not to co-occur with another extraction from this NP (47).

\[(45) \quad \text{Il n'a acheté [ Op₁ une photo t₁ que de Pierre ]}
\quad \text{he NE bought a picture QUE of Pierre}
\quad \text{`He only bought a picture of PIERRE.'}
\]

\[(46) \quad \text{* Il n'a acheté [ Op₁ ma photo t₁ que de Pierre ]}
\quad \text{he NE bought my picture QUE of Pierre}
\quad \text{`He only bought a picture of PIERRE.'}
\]

\[(47) \quad \text{* De qui ne possède-t-il [Op₁ un portrait que t₁ d'Aristote t₁ ]?}
\quad \text{of who NE possesses he a portrait QUE of Aristotle}
\quad \text{`By who does he only possess a portrait of ARISTOTLE?'}
\]

This allows us to verify the claim that operator movement is responsible for long distance construals with embedded tense clauses. It is predicted that a long distance construal is possible from within an object position (48), but impossible from a subject position (49) since the null operator movement violates the Subject Condition.
(48) Il n' aimerait [Op₁ que nous gardions [une photo t₁ que de lui ]] he NE would like that we keep a picture QUE of him
'He would only like us to keep a picture of HIM.'

(49) * Il n' aimerait [Op₂ que [IP [une photo t₁ que de lui ] soit gardée ]] he NE would like that a picture QUE of him be kept
'He would only like that a picture of HIM be kept.'

3.3. Syntactic scopal interactions

This analysis provides an explanation for the scopal interactions of que-phrases with negative quantifiers over events or situations like pas and jamais. It is argued that the notion of intervention on the process of chain formation (cf. Rizzi (1990) and Chomsky and Lasnik (1991)) explains the impossibility of some scopal interactions.

Two NegPs may be present in syntactic structure (50). It is therefore possible for pas to be interpreted with respect to one NegP and for the quephrase to be interpreted with respect to the other (51). However, in this case pas must have wide scope as given in (52). The low scope reading is impossible (53).

(50) Il n' a pas appris, il a mésappris.
he has not not learned he has mislearned
'He did not not learn, he mislearned.'

(51) Il n' est pas venu que Jean.
exp NE is PAS come QUE Jean
'There did not come only Jean.'

(52) \neg \exists e [ C(e) \land \neg \exists u [ C(u) \land u \neq j \land \text{come(e)} \land \text{th(e)} = u ] ]

(53) * \neg \exists u [ C(u) \land u \neq j \land \neg \exists e [ C(e) \land \text{come(e)} \land \text{th(e)} = u ] ]

(52) says that there is no contextually given event where no one but Jean came. This entails that other people came, if C sets up alternative coming events. (53) says that there is no one but Jean who did not come. In other words, Jean is the only one who did not come. This reading is absent with the ne que construction. The absence of (53) with the ne que construction follows from the syntax of chain formation. The low scope reading is only possible if pas is located in the lower NegP. But in this configuration, it will intervene between the higher NegP and Op preventing chain composition.

Similarly in (54) the negative adverbial jamais 'never' cannot take low scope. Hence the reading 'there is no one but Jean who never came' is not
available. This follows from the fact that in this reading the lower NegP with which jamais 'never' is associated will intervene between the higher NegP and Op blocking chain composition.

(54) Il n’est jamais venu que Jean
    exp NE is never come QUE Jean
    ‘There never came only Jean’

However, (54) also has an intensive reading. It means ‘at least it is only Jean who came.’ So you can utter (54) in the following circumstance. A friend of yours was to hold a party but forgot. The party time came and Jean showed up but no one else did. Later your contrite friend tells you about this misadventure. You then utter (54) to indicate that things could have been worse: more people or everyone could have shown up. The embarrassment could have thus been greater than it was.

This reading also follows from the proposed syntax since the modifier jamais ‘never’ can modify a unique NegP implicated in the interpretation of the que-phrase, thereby modifying the chain formed by ne and Op.

4. The semantics of ne que

The semantics of ne que is derived from the proposed syntax. All the parts of the construction contribute to the meaning. Syntactic evidence suggests that ne is a negative quantifier since it interacts with other quantifiers. The semantic contribution of ne will be similar to that of ‘nothing’ \[ \lambda P \neg \exists u P(u) \].

As to the semantics of the expression \[ Op [ que \ \alpha ] \], the expression splits a relevant sub-domain into the denotation of \( \alpha \) and its complement \( \neg\alpha \) (cf. Azoulay-Vincente 1988). The expression \[ que \ \alpha \] supplies the restriction of Op. It must include a context variable since the \[ Op [ que \ \alpha ] \] does not range over all other elements of the domain, but over a relevant subset. Thus \[ Op [ que \ \alpha ] \] denotes the set of contextually relevant expressions that are like \( \alpha \) but differ from \( \alpha \) (55). These semantics are related to semantics of ‘other’ and ‘but’ (cf. Heim, Lasnik and May (1991), von Fintel (to appear)).

(55) \[ Op [ que \ \alpha ] \Rightarrow \lambda \beta \lambda \gamma \ C(\gamma) \cap \gamma \neq \alpha \cap \text{Apply} (\beta\gamma) \]
    where \( \text{Apply} (\beta\gamma) = \beta(\gamma) \) or \( \gamma(\beta) \), whichever is well-formed

Hence \[ Op [ que \ \text{Jean} ] \] denotes the set of contextually relevant individuals that are not Jean (56).

(56) \[ Op [ que \ \text{Jean} ] \Rightarrow \lambda \beta \lambda x \ C(x) \cap x \neq \beta(x) \]
The interpretation of *ne que* as in (57) is transparent from the syntax.

(57) Il n’ est arrivé que Jean.
    exp NE is arrived QUE Jean
    ‘Only Jean arrived.’

(57) has the syntactic form in (58) where chain composition has taken place. [ Op [ *que Jean* ]] can combine with the predicate *arriver* ‘arrive’ (59).

(58) Il n1’ est arrivé [ Op1 [ *que Jean* ]]

(59) \( \lambda \beta \lambda x \ [ C(x) \cap x \neq j \cap \beta(x)] \ (\lambda y \ [\text{arrive} \ (y)]) \)
\( \lambda x \ [ C(x) \cap x \neq j \cap \lambda y \ [\text{arrive} \ (y)] \ (x)] \) \lambda–conversion
\( \lambda x \ [ C(x) \cap x \neq j \cap \text{arrive} \ (x)] \) \lambda–conversion

The property expression thus combines with the translation of the NegP in (60). These are the usual semantics of chains.

(60) \( \lambda P \, \neg \exists u \ P(u) \ (\lambda x \ [ C(x) \cap x \neq j \cap \text{arrive} \ (x)]) \)
\( \neg \exists u \ \lambda x \ [ C(x) \cap x \neq j \cap \text{arrive} \ (x)] \ (u) \) \lambda–conversion
\( \neg \exists u \ [ C(u) \cap \text{arrive} \ (u)] \) \lambda–conversion

(60) can be paraphrased as ‘it is not the case that there is a contextually restricted individual different from Jean such that that individual arrived.’ This clearly entails that only Jean arrived.

The semantics in (55) allow for *ne que* to be used with a wide variety of phrases. This is indeed needed; *que* can associate with NPs and VPs but also with PPs (61) and CPs (62).

(61) Jean n’ achète son vin que chez le récoltant.
    Jean NE buys his wine QUE at the producer
    ‘Jean only buys wine with PRODUCERS.’

(62) Jean ne se demande que si il devrait y aller.
    Jean NE wonder QUE if he should Loc go
    ‘Jean only wonders if he should go there.’

4.1. Revisions

It follows naturally that *que*-phrases are expected not to interact with adverbs of quantification. The semantics also predict that *que*-phrases can only combine with referential expressions. This is because the interpretation requires some individual to be different from. Hence the idiom *en*
voir trente-six chandelles 'have the lights knocked out of one' loses its idiomatic reading with the ne que construction (63).

(63) * Il n'a vu que trente-six chandelles.
    he NE of it has seen QUE thirty six candles
    * 'He only had the lights knocked out of him.'

Quantifiers such as personne 'no one' and tout le monde 'everyone' are predicted incompatible with the semantics of ne que (64) and (65). Tout le monde 'everyone' in (65) can refer to the sum individual. However, ne que carries a presupposition that there is a likelihood that someone else might have arrived. This presupposition is incompatible with the statement that the sum individual arrived. Ne que partitions the domain, and this partition must be meaningful.

(64) * Il n'est arrivé que personne.
    exp NE is arrived QUE no one
    'Only no one arrived.'

(65) * Il n'est arrivé que tout le monde.
    exp NE is arrived QUE everyone
    'Only everyone arrived.'

Indefinites are potentially problematic because the traditional semantics of an individual is 'some individual or other'. Indefinites are predicted to be ungrammatical under a traditional account. Interestingly, indefinites only have the unique individual interpretation (66).

(66) Il n'est arrivé qu'un individu.
    exp NE is arrived QUE an individual
    'Only one person arrived.'

Bonomi and Casalegno (1991) argue that the non-unique reading of indefinites is derived from the unique reading at different event assignments. The semantics of [Op [ que α ]] can be made sensitive to events (67).

(67) [ Op [ que α ]] => λ β λ e [ C(e) ∩ ∃ γ [ γ ≠ α ∩ Apply (βγ)(e) ]] where Apply (βγ) = β(γ) or γ(β), whichever is well-formed

Hence the VP in (66) denotes the set of contextually relevant arrivals where someone different from some unique individual arrived (68).
(68) \( \lambda e \ [ C(e) \cap \exists x \ [ \exists ! y \ [ \text{individual}(y) \cap x \neq y ] \cap \text{arrive}(e) \cap \text{th}(e) = x ] ] \)

Of course the semantics of \( ne \) must be revised accordingly: \( ne \) quantifies over events rather than individuals \( \ [ \lambda P \ \neg \exists e' P(e') \] \). (66) is thus interpreted as in (69).

(69) \( \lambda P \ \neg \exists e' P(e') \ \lambda e [ C(e) \cap \exists x \ [ \exists ! y \ [ \text{individual}(y) \cap x \neq y ] \cap \text{arrive}(x)(e) ] ] \)
\( \neg \exists e' \ \lambda e [ C(e) \cap \exists x \ [ \exists ! y \ [ \text{individual}(y) \cap x \neq y ] \cap \text{arrive}(x)(e) ] ](e') \)
\( \neg \exists e' [ C(e') \cap \exists x \ [ \exists ! y \ [ \text{individual}(y) \cap x \neq y ] \cap \text{arrive}(x)(e') ] ] \)

(69) says that there is no contextually relevant event where someone different from some unique individual arrived. It is thus not surprising that (66) asserts the uniqueness of that arrival.

5. \( Ne \ que \) and the role of pragmatics

Rooth (1985) assigns any expression \( \alpha \) a paired meaning \( (\alpha) \), \( \{ \alpha \} \) consisting of its usual denotation \( (\alpha) \) and its focus meaning \( \{ \alpha \} \). \( (\alpha) \) is a function on \( D_{W \times G} \) and \( \{ \alpha \} \) is a subset of \( D_{W \times G} \). If \( \alpha \) is not focused, then \( \{ \alpha \} = (\alpha) \). If \( \alpha \) is focused, it is the set of functions in \( D_{W \times G} \). A focus sensitive item contains a context variable \( C \), which is sensitive among other things to the focus meaning of an expression.

Rooth (1992) claims that the value of \( C \) is pragmatically fixed by the discourse context with the proviso that the context must be a subset of the focus meaning. I present here evidence that the range of possible domains is determined by structure, rather than discourse.

The present treatment allows for the association of \( ne \ que \) with focus (70). This is because the \( que \)-phrase which contributes to the restriction of \( Op \) contains a context variable, which is sensitive to the focus expression like the context variable of \( only \). This context variable contributes to the restriction of \( Op \). Thus in \( C \) there must be a subset of the set of unique stores where Pierre bought \( a_1, a_2, \ldots, a_n \).

(70) Il ne se souvient que du magasin où Pierre a acheté ASPECTS.
he NE remembers QUE the shop where Pierre bought ASPECTS
'He only remembers the shop where Pierre bought ASPECTS.'

The \( ne \ que \) construction presents a challenge for the view that discourse is responsible for establishing the domain of quantification. For \( ne \ que \) to associate with focus, the focus must be \( C \)-commanded by \( que \). Hence in (71) the focal stress on the verb does not associate with \( ne \ que \).
(71) Il MANGE de tout, mais il ne BOIT que du vin.

he EATS of all but he ne DRINKS que wine
‘He EATS everything but he only DRINKS wine.’

In (71) the two foci seem to set up two topics. BOIT cannot associate with ne que. (71) cannot therefore mean ‘the only relevant thing he does to wine is drink it,’ even though this reading is not contradictory with the statement ‘he eats everything.’ The absence of this reading is mysterious if domain selection is purely pragmatic, since nothing prevents that reading. The absence of this reading is explained under the view where structure determines accessibility.

Cases like (72) present a possible challenge for both this hypothesis and for Rooth’s view that C be a subset of the p-set (cf. Roberts 1991). In (72) the domain of quantification must necessarily be broader than the domain derived from a p-set under a notion of structural accessibility. This then might argue for pragmatic domain selection.

(72) A: Jean souffre d’amnésie totale.
Jean suffers from amnesia total
‘Jean suffers from total amnesia’

B: Pas exactement. Tu me croiras si tu veux mais
not quite right you me believe if you want but
‘Not quite right. Believe what you will but

il ne se souvient cependant que où il a acheté ASPECTS.
he NE remembers however que where he bought ASPECTS
he however only remembers where he bought ASPECTS.’

However, (72) is necessarily understood with an implicit ‘believe it or not.’ In other words, the focus here seems to establish an ordering relation to the effect that remembering where one bought Aspects is the least likely thing that one is expected to remember if one suffers from near total amnesia. Thus it is the introduction of a conventional scalar implicature that allows for the expansion of the domain, rather than a pragmatically filled context.

(73) provides independent evidence that discourse can introduce a scalar implicature. In (73) speaker B does not mean that Jean only drank beer. Rather the discourse forces a scalar implicature on the set of alternatives such that drinking beer is the least of them. Again in this case this ordering relation allows for an expansion of the domain. I suspect that the role of pragmatics is limited in such a way.
(73) A: Jean brûlera en enfer.
    Jean will burn in hell
    'Jean will burn in hell.'

B: Mais, il n’a bu que de la bière!
    but he NE drank QUE beer
    'but he only drank BEER!'

Rooth (1992) argues that if domain selection were purely semantic (74) should be contradictory, because it would be paraphrasable as: of all the things that they do to rice, those who grow rice just eat rice. Rooth therefore suggests that the domain of quantification can be entirely supplied by discourse. This is at odds with the proposal that focus must be in a position accessible to the context variable, a position C-commanded by it (71).

(74) Those who GROW rice only EAT rice.

There is evidence from French that potential domains are made available by structure. Consider (75b) with a clitic and (75c) with a full NP. The two sentences are uttered in the same context (75a), yet (75b) is necessarily contradictory while (75c) has a non-contradictory reading.

(75) a. Ceux qui ont produit diverses récoltes ont eu un régime varié
    those who produced diverse crops have had a diet varied
    'Those who produced diverse crops have had a varied diet

b. # mais ceux qui ont PRODUIT du riz n’en ont que MANGE.
    but those who PRODUCED rice NE of it have QUE EATEN
    'but those who have PRODUCED rice have only EATEN it.'

c. mais ceux qui ont PRODUIT du riz n’ont que MANGE du riz.
    but those who PRODUCED rice NE have QUE EATEN rice
    'but those who have PRODUCED rice have only EATEN rice.'

I propose that the difference between (75b) and (75c) can be accounted for by the availability of QR. LF movement can influence the way in which the p-set is built. In the case of a clitic, no LF movement is possible (75b). The focus value will be a set of relations between rice and rice growers: λ R R(rice)(rice growers). This will lead to the contradictory statement that rice growers do nothing with rice but eat it. In the case of a full NP, QR is possible leaving a derivation where a variable is left in the VP (75c). This variable can be implicated in the focus value. The focus value is then of the type λx λR R(x)(rice growers). The focus value thus
created will be a set of sets \{ \{P_1(g, a_1), P_1(g, a_2) \ldots P_1(g, a_n)\}, \{P_2(g, a_1), P_2(g, a_2) \ldots P_2(g, a_n)\}, P_n(g, a_1), P_n(g, a_2) \ldots P_n(g, a_n)\}\}. The domain of quantification of focus sensitive items must be a subset of the focus value. This focus value precisely includes a subset of the form \{ eat'(g, a_1), eat'(g, a_2) \ldots eat'(g, a_n)\} which can be taken as a value of \( C \). QR thus allows for an expansion of the domain of quantification, allowing the non-contradictory reading associated with (75c).

6. Conclusion

I have proposed that the interpretation of *ne que* is the product of chain composition between a negative quantifier *ne* and a null operator ranging over the complement set of the denotation of the phrase to which *que* attaches. The *que*-phrase provides the restriction of Op. The negative quantifier provides its quantificational strength.

This hypothesis is able to explain *ne que*’s otherwise mysterious interaction with movement. Namely, where in situ composition is possible no movement is necessary; however, if barriers intervene, operator movement can rescue the structure; hence, the movement effects. It has been shown that properties of the *ne que* construction reduce to independent properties of null operators.

The fact that VP-level quantificational elements like *beaucoup* or negative quantifiers *pas, jamais* block chain composition also follows from this analysis. Given this analysis, the semantics of *ne que* are that of chains. I have proposed that the semantics of *ne que* are sensitive to events, which captures the behavior of indefinites.

*Ne que*’s association with focus suggests that the range of possible domains is defined structurally: subject to C-command and LF movements. It was suggested that pragmatics can introduce scalar implicatures on the domain of quantification, allowing for domain widening.

References


Linguistic Inquiry 20, 365-424.


Roberts, C. (1991) "Domain Restriction in Dynamic Semantics," ms., The 
Ohio State University, Columbus, OH.

Rooth, M. (1985) Association with Focus, Ph.D. dissertation, University of 
Massachusetts.

Semantics 1, 75-116.

ms., UCLA.
Extraction from DP in Catalan and Strong Crossover

Natàlia Díaz-Insensé
Cornell University

1. Introduction

This paper focuses on a well-known generalization about extraction from DP, namely, the fact that extraction from DP is sensitive to the thematic hierarchy, understood as follows: Possessor > Agent > Theme/Patient. The pattern in (1) illustrates it for Catalan:

(1) a. *De quin fotògraf(Agent) has vist [DP les fotos del Jordí(Poss)]? Of which photographer have2SG seen the pictures of the Jordi?

b. *De quin fotògraf(Agent) has vist [DP les seves(Possessor) fotos]? Of which photographer have2SG seen the his pictures?

c. De quin amic(Poss) has vist [DP les fotos de Hamilton(Agent)]? Of which friend have2SG seen the pictures of Hamilton?

In (1) we observe that wh-extraction of an Agent over a Possessor is always blocked when the Possessor is overtly realized (underlined), in either postnominal position (1a) or prenominal position (1b). As pointed out by Cinque (1980) for Italian and by Milner (1982) for French, similar facts obtain with respect to ne-cliticization. The following examples are from Catalan:

(2) a. *N(Theme)'he vist el quadre de Dalí(Agent).
of-her have1SG seen the portrait of Dalí
'I have seen of her, Dalí's portrait'

b. *N(Theme)'he vist el seu(Agent) quadre.
of-her have1SG seen the his portrait
'I have seen of her, his portrait'

* I want to thank Gennaro Chierchia, Luis López, Zelmira Núñez, Sally McConnell-Ginet, Margarita Suñer and the two CWPL reviewers for their suggestions on earlier versions of this paper. And, in particular, I would like to thank Vicki Carstens for her generous comments, which have helped me clarify several issues. The usual disclaimers apply.
c. N(Agent)he vist el quadre de Gala(Theme)
of-him have1SG seen the portrait of Gala
'I have seen of-him, Gala’s portrait'

Consider also the following paradigm:

(3) a. *els seus(Theme) quadres de Dalí(Agent)
    the her portraits of Dalí
    ‘her portraits of Dalí’ *[Theme > Agent]

b. *els seus(Theme) quadres del Jordi(Poss)
    the her portraits of-the Jordi
    ‘her portraits of Jordi’ *[Theme > Poss]

c. *els seus(Agent) quadres del Jordi(Poss)
    the her portraits of-the Jordi
    ‘his portraits of Jordi’ *[Agent > Poss]

(4) els seus(Ag/Poss) quadres de Gala(Theme)
    the his portraits of Gala
    ‘his portraits of Gala’ √[Ag/Poss>Theme]

As (3)-(4) show, possessivization within DP is also sensitive to the thematic hierarchy.\(^1\) Given the clear parallelism between extractability and possession, it has often been proposed that the position occupied by prenominal possessives in Romance must be the position from which extraction proceeds or the position from which extraction is licensed. Rizzi (1990) offers a proposal along the following lines: since nouns are non-structural governors (in the sense of Kayne 1984)), they cannot govern the trace of the wh-extracted constituent unless it

\(^1\) This fact, which was already noted by Cinque (1980), may be stated as in (i):

(i) *Possessivization Principle* (Giorgi and Longobardi, 1990: 68)

The unique phrase allowed to appear as a possessive is the hierarchically highest genitive argument of an NP

Although in this paper I will not discuss the relationship between the thematic hierarchy and possessivization, it must be pointed out that the possessivization principle is not an explanation for such phenomena, but just a descriptive generalization. I will assume, following some previous analyses (cf. Carsens 1991, Mallén 1991) that it can be accounted for by the ECP and relativized minimality (Rizzi 1990).
passes through the empty possessive position (the specifier position of NP by assumption) and triggers "abstract agreement on the head", thereby "turning the nominal element into an appropriate head governor for the trace" (see also Giorgi and Longobardi 1990).

A rather different approach is provided in Valois (1990 & 1991). According to him, the severe constraints on extraction from DP can be explained as violation of the Condition on Chain Links (Sportiche 1990): all traces must be antecedent governed at S-Structure. Based on Sportiche's theory of movement, which establishes that movement is successive cyclic, Valois argues that the extraction phenomena illustrated in (1)-(2) follow from the fact that when adjunction is not permitted, extraction must proceed through the specifier. In other words, assuming that adjunction is impossible within DP and that thematic hierarchy reflects a structural hierarchy (where arguments occupy the specifier position; cf. Carstens 1991, Giorgi and Longobardi 1990, Mallén 1989 & 1991, Torrego 1988), it follows that either possessors or agents will always block successive cyclic movement of any lower argument:

\[ (5) \]
\[
\begin{array}{c}
\text{NP} \\
\text{Poss} \\
\text{N'} \\
\text{N}^0 \\
\text{Agent} \\
\text{N'} \\
\text{NP} \\
\text{Theme} \\
\text{N'} \\
\text{N}^0 \\
\text{NP} \\
\end{array}
\]

*adjunction

*adjunction

In this paper, I argue that Rizzi's analysis accounts for the special connection between possessivization and extrattractability but fails to explain why postnominal arguments in Romance also block extraction from DP (section 2.1). On the other hand, I also argue that even though Valois' proposal correctly predicts the ungrammaticality of (1a-b) and (2a-b) without having to attribute any special character to the Romance prenominal possessive position, it crucially depends on adjunction being impossible within DP, a rather stipulative assumption (section 2.2).

Thus, building on Rizzi's original insight, namely the idea that extraction may be licensed by a special agreement mechanism within DP, I provide an alternative account for these extraction phenomena
(section 3). On the one hand, based on previous work by Piccallo (to appear) on the inflectional projections of Catalan DP’s and Valois’ (1990, 1991) NP shell hypothesis, I assume a representation for DPs in which three functional projections are projected above NPs, namely, Gender Phrase (GeP), Number Phrase (NumP) and Determiner Phrase (DP) as in (6):

(6) \( DP > NumP > GeP > NP^* > NP \)

On the other hand, granting a hierarchical distribution of arguments (as so extensively discussed in the literature), I assume with Carstens (1991a, 1991b) that postnominal subjects in Romance are case marked under government. Furthermore, generalizing the standard view on Romance postverbal subjects, I argue (i) that the thematically highest argument is coindexed with a pro-expletive in [Spec Num], (ii) that extraction from DP is licensed from postnominal position (cf. Rizzi’s proposal for Romance languages at the clausal level), and that extraction proceeds through [Spec D], an A’-position. Given this set of assumptions, I show that the blocking effect of possessives/subjects within DP should be thought of as an instance of Strong Crossover in the nominal system, and I claim that extraction from DP can be explained by independently motivated principles of grammar, that is, by Condition C of the Binding Theory or the Theta Criterion (if stated in terms of chains).

2. Two Previous Accounts

Although we can find several accounts of extraction from DP in the literature, I outline here the two approaches that are more relevant for the analysis I propose in section 3.

2.1. Rizzi (1990)

As already pointed out above, Rizzi’s hypothesis is that nouns can properly govern the trace of the extracted constituent if and only if the trace proceeds through the empty possessive position, where it triggers abstract agreement on the head noun. Only in these cases, he argues, the nominal becomes an appropriate head governor for the trace. In this sense, Rizzi’s proposal crucially relies on the assumption that nouns are not adequate governors for non-argumental traces (cf. Kayne 1984) and that the mechanism responsible for its head-governing capacities is spec-head agreement.

To illustrate this hypothesis consider the following representations:
(7) a. \[XP \ldots [NP \ t' [N^\circ N^o \ t]]\]

\[\uparrow \quad \uparrow \]

b. \[\ast XP \ldots [NP YP [N^\circ N^o \ t]]\]

\[\uparrow \quad \uparrow \]

Since extraction must be licensed in [Spec N], it follows that in (7b) the trace cannot trigger spec-head agreement because YP occupies the specifier position. Hence, in (7b) the noun may not properly head govern the wh-trace and the structure is ruled out by the Empty Category Principle (ECP): A non-pronominal empty category must be properly head-governed. In (7a), however, no problem arises with extraction because the head noun becomes a proper head-governor for the trace by spec-head agreement.

It is easy to see that Rizzi's analysis, as it stands, raises two important problems. First, it does not explain why postnominal arguments in Romance also block extraction. Consider (8) which is a potential representation for (1a) above—repeated here for convenience:

(8) a. \[\ast De quin fotògraf(Agent) has vist les fotos del Jordi(Poss)?\]

Of which photographer have2SG seen the pictures of the Jordi?

b. \[\ast XP \ldots [NP \ t' [N^\circ N^o YP \ t]]\]

\[\uparrow \quad \uparrow \]

According to Rizzi (1990), (8a) is predicted to be grammatical. Since [Spec N] is empty in (8b), the most embedded trace ought to be able to land in the specifier position and turn N into a proper head governor by spec-head agreement. In this regard, it is also clear that in (8b) we cannot resort to relativized minimality (see Rizzi 1990): wh-extraction is an instance of A'-movement and YP is presumably sitting in an A-position.\(^2\)

---

\(^2\) Relativized Minimality is defined in Rizzi (1990) as follows:

Relativized Minimality: \(X\) a-governs \(Y\) only if there is no \(Z\) such that

(i) \(Z\) is a typical potential \(\alpha\)-governor for \(Y\),

(ii) \(Z\) c-commands \(Y\) and does not c-command \(X\).

Since \(\alpha\)-government ranges over both head government and antecedent government and the latter (is interpreted as a property of
Second, it is not obvious how to derive these extraction phenomena once we adopt a more articulated structure of noun phrases, such as the one proposed by the DP hypothesis, where at least one extra specifier position is available, namely [Spec D]. In other words, even if we adopt a minimal version of the DP hypothesis, we would need to determine which position qualifies for the relevant agreement relationship.

2.2. Valois (1990, 1991)

Unlike Rizzi's, Valois' analysis of extraction incorporates several assumptions regarding noun phrase structure. Valois' hypothesis is that the "internal structure of Noun phrases is strictly parallel to that of CP in all respects." For this reason, following (i) the Subject Internal Hypothesis (see, e.g. Koopman and Sportiche 1988), (ii) the VP-shell Hypothesis (see Larson 1988 and Sportiche 1990 among others), and (iii) the DP hypothesis (cf. Abney 1986, Ritter 1988 & 1990 and Szabolcsi 1983), Valois assumes a representation in which three functional categories are projected above NP — Case Phrase (CaP), (ii) Number Phrase (NumP), and (iii) Determiner Phrase (DP), where [Spec D] is the only A'-specifier within DP. Compare (9a) with the current structure assumed for CPs (9b):³

³ I am presenting here Valois' (1990) DP hypothesis instead of his more articulated version in Valois (1991) because the intermediate projections he assumes to account for the difference between event and result/underived nominals are not necessary to illustrate the main points of his particular approach to extraction. According to Valois (1990) the head of CaP is responsible for structural genitive case assignment within DP. See Valois (1991) for details.
(9) a. DP > NumP > Ca(se)P > NP*4 > NP
b. CP > AgrP > TP > VP* > VP

Based on empirical evidence from English and French regarding adjective placement, Valois also argues that nouns undergo head-to-head movement to N*->CaP->Num0 in Romance. This claim together with the assumption that arguments can be case marked under Spec-head agreement or government allows him to derive the correct word order facts (SNO in English, NSO in Romance).5

Now, under this set of assumptions, Valois assumes (following Sportiche’s general theory of movement) that extraction from DP is successive cyclic. Roughly, the claim is that the complement of Y0 in (10) can only cross YP (a potential barrier) if the specifier of YP is available, or if adjunction to YP is possible. In other words, movement out of YP can only be of two kinds: adjunction and substitution.

(10)

Since Valois crucially assumes that adjunction within DP is prohibited, it follows that when we try to extract a Theme over an Agent or Possessor (or an Agent over a Possessor), this movement is blocked because (i) substitution is impossible, and (ii) adjunction is prohibited. The example in (11) illustrates extraction of a Theme when a postnominal Agent has been projected:

(11) a. *De quina ballarina(T) has vist les fotos de Hamilton(A)?
Of which ballerina have2SG seen the pictures of Hamilton?

---

4 Following Sportiche (1990), Valois (1990) also notes that NP projection depends on there being an external argument and may iterates only if a possessor argument is present needed. Hence (9a) should be represented as follows:

DP > NumP > CaP > (NP**) > (NP*) > NP

5 In that sense, the raising of nouns to the head of NumP in Romance is also a reflect of the close parallelism between the nominal and clausal structure (cf. the extensive literature describing verb movement in English and Romance languages: V*->T0->Agr0).
It is clear that the main difference between Rizzi’s and Valois’ analyses of extraction from DP lies on the relevance attributed to the prenominal possessive position in Romance (see (3) and (4)). In this sense, since Valois’ hypothesis involves successive cyclic movement, it correctly predicts that both prenominal and postnominal arguments block extraction of any other lower argument in the thematic hierarchy. However, the main objection raised by this analysis is theoretical because it heavily relies on a rather stipulative assumption, namely, that adjunction within DP is not allowed.

3. An Alternative Analysis

In what follows, I provide an alternative account for the extraction phenomena which develops Rizzi’s original hypothesis: extraction from DP is licensed by an special agreement mechanism within the nominal system.

3.1. Extraction from DP and Strong Crossover

Before presenting the analysis, I summarize below some of the assumptions I adopt from previous work:

a. The thematic hierarchy is structurally represented (cf. most of the literature);
b. Arguments are occupy Spec positions, i.e. they are in A-positions;
c. CP and Noun Phrases are strictly parallel in all respects (as assumed in Valois 1990 & 1991); which entails that I also assume
d. the Subject Internal Hypothesis (cf. Koopman & Sportiche 1988);
e. the NP-shell hypothesis (cf. Valois 1990 & 1991); and,
f. the DP Hypothesis proposed by Valois, but modified as follows:
   DP > NumP > Gender Phrase > (NP**) > (NP*) > NP
   (cf. Picallo (to appear)), where the iteration of NP-shells depends on
   there being any external theta roles assigned (Valois 1990 & 1991);
g. where [Spec D] is the only A'-specifier within DP (Szabolcsi 1983,
   Valois 1990 & 1991), and
h. there is head-to-head movement from N⁰ to Num⁰ (Valois 1990 &
   1991); and, where
i. Romance Nouns assign genitive case under government (cf.
   Carstens' Gender Parameter (1991)).

Furthermore, since I want to build on Rizzi's basic hypothesis, follow-
ing him I also assume that

(12) Nouns are non-structural governors (Kayne 1984, Cinque 1990,
   Giorgi and Longobardi 1990), but may be turned into appropriate
   governors by spec-head agreement.

Therefore, assuming Rizzi's relativized minimality⁶ and that the ECP
   can be stated as in (13),

(13) Non-pronominal empty categories must be properly
   head-governed,

my hypothesis is that we can maintain that extraction from DP is
   licensed by a special AGREEMENT mechanism within DP, provided
   we make the following assumptions:

   First, given the standard view on Romance postverbal subjects, I
   propose that the highest postnominal argument of a noun be coindexed
   with a pro-expletive in [Spec Num]. As empirical support for this
   assumption we may consider the data in (14), from Carstens (1991a: 84):

(14) a. kitabu cha Zeinabu
     7book 7of
     'Zeinab's book'

   b. uandishi wa vitabu wa Toni Morrison
     14 write 14of 8book 14of
     'Toni Morrison's writing of books'

---

⁶ See footnote 3 above.
As these examples illustrate, Swahili postnominal arguments are introduced by an "of" element which bears overt agreement with the head noun (noun class agreement). Thus, even though Catalan de-phrases do not show gender and number agreement, I assume that the pro-expletive and the postnominal arguments in Romance also bear abstract agreement features. Following standard practice I will indicate agreement chains with superscripts.

Second, I assume that all arguments within DP receive a referential index. Following Rizzi (1990: 86) we may propose that "referential indices must be licensed by a referential theta role." These indices I will represent with subscript notation.

And third, I assume that extraction from DP is licensed from postnominal position, that is extraction, is licensed under strict c-command from the Noun in Num^0. (cf. the parallel hypothesis with respect to the strategy adopted by Romance languages for subject extraction at the clausal level).

Thus, consider in this light the following examples, where a theme has been wh-extracted over a prenominal Agent (15a) or a postnominal Agent (15b):

(15) a. *De quina ballarina(T) has vist [DP les seves(A) fotos]?
      Of which ballerina have-2SG seen the his pictures?

b. *De quin ballarina(T) has vist [DP les fotos de Hamilton(A)]?
      Of which ballerina have2SG seen the pictures of Hamilton?

for which I assume the following representations:

---

7 In fact, it is interesting to note that Rumanian postnominal arguments do bear such an agreement marker (I thank Ed Rubin for pointing this out to me).
As (16a) and (16b) illustrate, both the Agent and the wh-extracted Theme carry a referential index (indicated with subscripts). In both cases, wh-extraction proceeds through [Spec D], an A'-specifier. The only difference between the two structures is that in the former the pronominal Agent (a possessive) is raised to [Spec Num] whereas in the later the non-pronominal Agent is case marked in situ (i.e. in [Spec NP*]) and is coindexed with a pro-expletive in [Spec Num]. Recall that superscripts indicate sharing of phi-features between the relevant elements.
But consider these two examples more closely. We have assumed that nouns undergo head-to-head movement to N*, Ge° and Num°, where they are fully specified for gender and number features. Furthermore, it is well-known that in Romance the determiner and the noun (D and N in Num°) always agree in gender and number (see 17); this is indicated in (16) with superscripts.

(17) a. els quadres
    the-MP portrait-MP ‘the portraits’

b. les fotos
    the-FP portrait-FP ‘the pictures’

Yet, we must also assume that by spec-head agreement, both the head noun in Num° and the Agent in [Spec Num] bear an agreement index (superscript). In fact, in Catalan such agreement in gender and number is overt in prenominal position:

(18) a. els [[[se]-us]] quadres
    the-MP [[[pro-3SG]-MP]] portrait-MP
    ‘His/her/their portraits’

b. les [[[sev]-es]] fotos
    the-FP [[[pro-3SG]-FP]] portrait-FP
    ‘His/her/their pictures’

And by the same logic, it also follows that D must agree with its specifier, i.e. the wh-trace in [Spec D]; this is again indicated with superscripts. Now, given these special agreement mechanisms within DP, we are observe that both in (16a) and (16b) the agreement chain that has been established by the wh-extracted constituent contains two referential indices:

(19) a. *CHAIN: (wh₁, sevesₖ², t₁²) (=16a)

b. *CHAIN: (wh₁, pro-exp², [de Hamilton]ₖ²,t₁²) (=16b)

Thus, it is easy to see that under these representations the blocking effect of prenominal postnominal possessives/subjects within DP is not but an instance of Strong Crossover in the nominal system: in both chains, the trace of the wh-extracted constituent became A-bound by an element in an argument position which bears a different theta-

---

8 Cf. the Wh-Criterion, or the Neg-Criterion at the clausal level.
role. Consider the standard examples of Strong Crossover at the clausal level:

(20) a. *(Who_i does he_i like t_i ?
       *CHAIN: (who_i, he_i, t_i)

   b. *(Who_i does he_i think that Mary likes t_i ?
       *CHAIN: (who_i, he_i, t_i)

In (20), the Strong Crossover configuration originates when the extracted element shares a referential index with the subject in the matrix clause (i.e., no Strong Crossover effect obtains if he and t bear different theta roles/referential indices). Therefore, given this set of assumptions, the claim is that extraction of non-subject arguments is blocked because it forms a non-permissible chain connection; that is, it results in a violation of Condition C of the Binding Theory which states that "an R-expression must be A-free."

Note that it is also possible to subsume these Strong Crossover effects under the Theta Criterion if (as in Rizzi 1990) we state it in terms of the notion of chain.\(^9\)

---

9 Subject is to be understood here as the highest overt argument of the thematic hierarchy (Possessor > Agent > Theme), which if pronominal is allowed to appear in pronominal position (cf. Giorgi and Longobardi’s (1990) Possessivization Principle). Notice that under this assumption this analysis also captures Cinque's original observation, namely, the fact that in order for an argument to appear as a pronominal possessive or to extract it had to count as the subject of the noun phrase.

10 The following are Rizzi’s definition of chain and antecedent government (Rizzi, 1990: 92-93):

   (a) Chain (partial definition)
       (a_1, \ldots, a_n) is a chain only if, for 1 \leq i < n, a_i antecedent governs a_{i+1}.

   (b) Antecedent-government (for Chains)
       X antecedent governs Y iff
       (i) X and Y are nondistinct
       (ii) X c-commands Y
       (iii) no barrier intervenes
       (iv) Relativized Minimality is respected.
(21) **Theta Criterion** (Rizzi 1990: 93)

(i) Each Theta position belongs to a chain containing exactly one argument.

(ii) Each argument belongs to a chain containing exactly one Theta position.

To show that extraction from DP is licensed from postnominal position consider an example of a well-formed derivation:

(22) a. *De quin fotògraf(A) has vist [dplès fotos d’una ballarina(T)]?*

Of which photographer have2SG seen the pictures of a ballerina?

b. 

```
\begin{array}{c}
\text{wh}_2\\ \text{DP} \\
\text{D} \\
\text{D} \\
\text{NumP} \\
\text{les}^2 \text{ pro-exp}^2 \\
\text{Num'} \\
\text{Num fotos}^2 \\
\text{GeP} \\
\text{Ge'} \\
\text{Ge} \\
\text{NP*} \\
\text{t}_2^2 \\
\text{N*} \\
\text{N'N'} \\
\text{[d'una ballarina] k} \\
\end{array}
```

c. **CHAIN:** (wh$_2^2$, pro-exp$_2^2$, t$_2$)

As (22c) illustrates, the chain that has been established after agreement features are assigned contains only one referential index. Hence, following Rizzi (1990), we may now claim that the noun acquires special governing capacities and becomes a proper head-governor for the subject trace (in other words, raising to pronominal position is not needed and extraction may take place from postnominal position). The licensing requirement (head-government) is achieved under government and the wh-extracted constituent need not land in [Spec Num] (cf. Rizzi’s spec-head agreement mechanism). In fact, it is easy to see that extraction form DP is completely parallel to subject extraction at the clausal level (cf. Rizzi’s analysis of subject extraction in Romance). Hence, if this analysis is correct, extraction from DP may be accounted for whatever principle explains Strong Crossover, and unlike Valois
(1990 & 1991) we need not stipulate that adjunction within DP is prohibited.\footnote{In fact, it may well be the case that we must adjoin to some maximal projection within DP to avoid subjacency effects. (I must thank an anonymous reviewer for bringing out the problem with direct extraction through [Spec D]).}

3.2. The French que-qui rule and Strong Crossover

As independent evidence in favor of this hypothesis, it can be showed that extraction from DP obeys restrictions similar to the que-qui phenomenon in French:

(23) a. la femme; qui/*que t_i est venu  
the woman who came

b. la femme; *qui/*que je connais t_i  
the woman that I know

Suppose that French qui, unlike que, is a complementizer which bears phi-features, that is, nominative case. Then, when relativization involves extraction of an object over a subject (as in (23b)), it follows that the subject interferes in the agreement chain that is established between the operator in [Spec C], the agreeing complementizer qui and the empty category in complement position (23b). In other words, as the representations in (24) show, an agreeing complementizer like French qui produces a Strong Crossover configuration (24b):

(24) a. la femme; *qui/*que je connais t_i  
the woman that I know

b. la femme; [CP Op_i ² *qui ² [je² connais t_i ²]]

To put it another way, (24b) reflects the formation of a non-permissible chain (which contains two referential indices or theta roles):

(25) *CHAIN: (Op_i ², je_k², t_i)  =>  *qui

Therefore, under the approach presented in this paper, the constraints on the application of the que-qui rule in French follow from the hypothesis that nominative case agreement between C and the subject is carried over the specifier of CP. Hence, the claim is that
both the *que-qui* rule in French and the extraction from DP are amenable to the same kind of analysis.

4. Conclusions

To conclude, under the analysis presented in this paper we derive the fact that both prenominal and postnominal arguments block extraction. Furthermore, by assuming that nouns are non-structural governors, we can also predict that extraction of non-referential expressions (adjuncts) is always impossible (nouns are non adequate governors for the traces of non-subcategorized constituents) and we do not need to stipulate that adjunction within DP is impossible. Yet, Valois’ original idea, namely, the strict parallelism between CP and DP, can be maintained through Rizzi’s insight about a non-special licensing mechanism within DP, namely, spec-head agreement. Thus, the constraints on extraction from DP are explained by independently motivated principles of grammar, such as the ECP and Condition C of Binding Theory (or the Theta Criterion, if stated as in (21)).

References


Szabolcsi, A. 1983. ‘The possessor that ran away from home.’ In *Linguistic Review* 3.1: 89-102

Torrego, E. 1988. ‘Evidence for Determiner Phrases’, ms., University of Massachusetts, Boston, MA.


The Structure of Noun Phrases: Arguments for Quantifier Phrase and Number Phrase

Ruriko Kawashima
Cornell University

This paper argues that Quantifier Phrase (QP) and Number Phrase (NumP), which have already been proposed on independent grounds (Ritter (1990), Carstens (1991) for NumP, Mallén (1989), Cardinaletti and Giusti (1990), Giusti (1991) for QP), are both necessary in the structure of noun phrases. The arguments are based on Japanese data, which show that quantifiers and Numeral Classifiers have different syntactic distributions and that they are better treated as belonging to different categories. More specifically, I will argue that QP takes DP (a definite NP) as its complement and NumP, which may appear as a complement of DP, takes an NP complement. The schematic representation of the structure of maximal nominal phrases, then, is as follows: [QP [DP [NumP [NP ]]]].

In section 1, I will provide some Japanese facts which show that quantifiers and Numeral Classifiers are different in their syntactic distributions, based on the partitive construction, ability to scramble, ability to appear within the Case-marked domain, and the co-occurrence possibilities of quantifiers and Numeral Classifiers within the same noun phrase in a fixed order. Then, I will show that the differences will be accounted for if we assume the existence of two different categories, each of which heads a distinct position in the structure of nominal phrases. In section 2, I will discuss the partitive interpretation associated with Numeral Classifiers which appear with accusative-marked NPs. In section 3, I will show that the proposed analysis provides a natural account for Inoue’s (1978) well known data, which have been problematic for previous analyses.¹

* I am grateful to Hisatsugu Kitahara, John Whitman and anonymous reviewers for reading and commenting on a preliminary version of this paper. I am also grateful to John Bowers, Molly Diesing, and Yafei Li for their clarifying remarks and helpful discussion. I also express my gratitude to Chris Brown, who proofread this paper. All errors are my own.

¹ I will suggest two distinct nominal structures yielding partitive interpretations in Japanese in Appendix I and discuss some possible differences between English and Japanese partitive structures in Appendix II.
1. The Structure of Nominal Phrases Containing Quantifier Phrase and Number Phrase

1.1. Different Behaviors between Quantifiers and Numeral Classifiers in Japanese

There are certain syntactic facts which show that the distributions of quantifiers and Numeral Classifiers (henceforth, NCs) in Japanese are different from each other. First, with respect to the partitive construction, quantifiers can appear with a genitive (GEN)-marked bare NP whereas NCs cannot.

(1) a. gakusei-no ooku [NP-GEN Q]²
    student-GEN many
    'many of the students'

b. gakusei-no hotondo [NP-GEN Q]
    student-GEN most
    'most of the students'

c. gakusei-no subete [NP-GEN Q]
    student-GEN all
    'all of the students'

(2) *gakusei-no san-nin [NP-GEN NC]
    student-GEN 3-CL
    '(Intended) three of the students'

Let us call the [NP-GEN α] construction the partitive construction; then, quantifiers like ooku "many," hotondo "most," and subete "all" can appear in the position α of the partitive construction whereas NCs cannot. When a nominal expression uti "out of" is added to the NP in the partitive construction, the sentence is acceptable as shown in (3):³

(3) gakusei-no-uti-no san-nin [NP-GEN-uti-GEN NC]
    student-GEN-out-of-GEN 3-CL
    'three of the students'

---

² In the analytic gloss, I gloss quantifiers as Q.
³ See Appendix for further discussion of this structure.
Second, quantifiers like *subete* "all" cannot be scrambled whereas NCs can (Terada (1990)).

(4) a. John-ga hon-o subete katta
    J-NOM book-ACC all bought
    'John bought all the books.'

    b. *subete* John-ga hon-o t katta
        all J-NOM book-ACC bought

(5) a. John-ga hon-o san-satu katta
    J-NOM book-ACC 3-CL bought
    'John bought three books.'

    b. san-satu John-ga hon-o t katta
        3-CL J-NOM book-ACC bought

Third, quantifiers sound awkward when they occur within a Case-marked domain while NCs are possible as shown in the contrast between (6b) and (7b).

(6) a. John-wa honya-ni itte, hon-o subete katta
    J-TOP bookstore-to went book-ACC all bought
    'John went to a bookstore and bought all the books.'

    b. *John-wa honya-ni itte, hon subete-o katta
        J-TOP bookstore-to went book all-ACC bought

(7) a. John-wa honya-ni itte, hon-o san-satu katta
    J-TOP bookstore-to went book-ACC 3-CL bought
    'John went to a bookstore and bought three books.'

    b. John-wa honya-ni itte, hon san-satu-o katta
        J-TOP bookstore-to went book 3-CL-ACC bought

---

4 A more precise generalization seems to be that a quantifier cannot precede its associated noun phrase since the noun phrase and the quantifier together can undergo scrambling, which adjoins a category to a maximal projection:

(i) hon-o subete John-ga t katta
    book-ACC all J-NOM bought
    'John bought all the books.'
Fourth, when a quantifier and an NC co-occur, the NC must precede the quantifier:

(8) a. John-ga hon-o san-satu subete katta
     J-NOM book-ACC 3-CL all bought
     'John bought all the three books.'

b. *John-ga hon-o subete san-satu katta
     J-NOM book-ACC all 3-CL bought

In the next section, I will review previous analyses of the nominal phrases and then propose a structure of nominal phrases in Japanese which accommodates the contrast discussed above.

1.2. The Structure of Nominal Phrases

A number of researchers (Ritter (1990), Carstens (1991)) have recently proposed a category, Number Phrase, between DP and NP. Others (Mallén (1989), Giusti (1991)), looking at the behavior of quantifiers, have proposed a category Quantifier Phrase dominating DP (i.e. outside both DP and NP).

As for the structure of nominal phrases in Japanese, Kamio (1983) argues that nominal phrases e.g. hon-o "book-ACC" and its numeral classifier san-satu "three-CL" form a single constituent, by showing that they can be coordinated and pseudo-clefted:

5 For Giusti (1991), QP takes a DP complement (a definite NP) or NP complement, depending on the lexical property of the quantifier. (ia) is an example of QP taking a DP complement and (ib) is that of QP taking NP complement.

(i) a. most of the students
     b. many students

For Mallén, QP is still a category between DP and NP. For Giusti, however, QP does not project within DP; consequently, she regards quantifiers within DP as adjectives (e.g., many in the many books).

There is some support for the adjective status of many. First, it has comparative and superlative forms: more and most respectively. Second, it can be modified by a degree expression like very. Third, in Dutch, veel "many" can be inflected in adjectival form, in which case it can only have the cardinal reading (de Hoop (1992)). A reviewer points out to me that this is also the case in German.

6 See Miyagawa (1989) for a non-constituent analysis of NCs.
(9)  a. John-ga hon-o san-satu to zassi-o go-satu
      J-NOM book-ACC 3-CL and magazine-ACC 5-CL
      katta
      bought
      'John bought three books and five magazines.'

      b. John-ga katta no-wa hon-o san-satu da
      J-NOM bought NO-TOP book-ACC 3-CL COPUL
      'What John bought is three books.'

Concerning the internal structure of this single constituent, several different analyses have been proposed (cf. Tateishi (1989), Terada (1990), Yoshida (1990), Kawashima and Kitahara (1993)). Among them, Kitahara (1992) proposes the following structure in which a nominal category such as NP bears a Case feature which is realized as an overt Case particle:7,8

(10)  

              DP
               /
              Spec
             D'
               /
             NCP
              D
             / [+ACC]
            Spec NC'
              /
            NP NC
            /
           hon-o san-satu
           book-ACC 3-CL

In (10), an NP hon-o "book-ACC" first moves to Spec of NC where it agrees with a head NC and then further moves to Spec of DP where it can check its ACC-feature with a head D. Checking is done when features meet in a Spec-head configuration.9 Note also that the above structure captures the head-final nature of Japanese.

7 Tang (1990) proposes a similar phrase structure for nominal phrases in Chinese.

8 For an independent motivation for DP in Japanese, see Saito and Murasugi (1990).

9 See Chomsky (1992) for the theory of feature checking.
A structure such as (10) is proposed only considering nominal phrases with NCs, however, when we look at the syntactic distribution of quantifiers in comparison to NCs, we are left with a question of whether such a structure is sufficient.

In this paper, I argue that the full-fledged nominal phrase structure should contain both of the independently motivated categories, QP and NumP respectively. More specifically, I propose the following structure where QP takes a DP complement, which in turn takes a NumP complement:\(^{10}\)

\[
(11) \quad \text{QP} \\
\quad \text{...} \\
\quad \text{DP} \\
\quad \text{...} \\
\quad \text{NumP} \\
\quad \text{...} \\
\quad \text{NP}
\]

Furthermore, QP always requires its complement to be definite. This correctly predicts certain distributional facts of quantifiers and numerals. Quantifiers such as all can precede a definite determiner as in (12a) but it cannot precede a category of the same type as in (12b):\(^{11}\)

\[\text{In Kawashima and Kitahara (1993), we adopted a structure as in (10) where DP takes a Numeral Classifier Phrase (NCP) instead of a NumP as its complement. However, there is no empirical motivation to choose either one of them over the other since classifiers and numerals cannot be separated in Japanese. In this paper, following Ritter (1990), I will call this projection NumP.}\]

\[\text{In there-sentences where definite nominal phrases are disallowed, (i) is disallowed whereas (ii) is not, as shown in (iii) and (iv) respectively:}\]

(i) all the students
(ii) all students
(iii) *There are all the students
(iv) There are all students

This contrast shows that all in (ii) does not take a DP complement which is definite, unlike (i). However, there is a difference between (ii) and cardinal
(12) a. all of the students  
b. * all of each student

It is also predicted that a quantifier can co-occur with a numeral in a certain order. Namely, the former precedes the latter in head-initial languages.

(13) all the three students

The above structure (i.e. (11)) also captures the different behavior between quantifiers and NCs that we have seen above. The ordering restriction between a quantifier and an NC follows, given that Japanese is a head-final language. Furthermore, the awkwardness of a quantifier being within a Case-marked domain can be explained by the proposed analysis that a quantifier takes a DP complement. Examples (6b) and (7b) are schematically represented as (14a) and (14b) respectively:

(14) a. * [QP [NP hon] [Q subete-o]]  
      book all-ACC  

    b. [DP [NumP [NP hon] [Num san-satu-o]]]  
      book 3-CL-ACC

(14a) is ill-formed because the quantifier subete “all” does not take DP complement.\textsuperscript{12}

The structural difference between quantifiers and numerals also predicts that numerals behave just like nominal expressions (in a sense, they are L-related to a nominal head (Chomsky (1992))):

nominal phrases such as “three students” in that the former cannot be coordinated in there-sentences whereas the latter can:

(v) * There are all students and all professors  
(vi) There are three students and two professors

I will leave open the exact structure of (ii).

\textsuperscript{12} The sentence (i.e. (6b)) improves if the NP is made specific (with a relative clause modifier and so on):

(i) John-wa [[soko-ni atta hon] subete-o katta  
    J-TOP there existed book all-ACC bought  
    ‘John bought all the books which were there.’

I assume that, when such a modifier induces a specific interpretation, the NP hon “book” projects up to DP. Hence it satisfies selectional restrictions of the quantifier subete “all.”
(15) a. those three
  b. the beautiful three of those girls

Quantifiers cannot replace numerals in the above examples. In this section, I have discussed the differing behaviors of quantifiers and NCs in Japanese and proposed a more articulated nominal phrase structure in order to account for them.

2. Partitive Interpretation with Accusative-marked NP

We saw in section 1 that the partitive interpretation with NCs can be expressed by a GEN-marked NP headed by utoi “out of”. The following sentence seems to show that an NC can have a partitive reading when its associated NP is ACC-marked.

(16) John-wa [gakusei-tati]-o san-nin paattii-ni yonda
    J-TOP student-PL-ACC 3-CL party-to invited
    ‘John invited three (of the) students to the party.’

Although the English translation I give to (16) contains a partitive construction, I do not regard this Japanese case as being a real case of the partitive construction. More specifically, the ACC-marked NP in (16) is an

---

13 The order of the adjective and the numeral in (15b) suggests that three is under N rather than Num.

14 In addition to numerals, I assume that weak determiners (Milsark (1974)) can appear in NumP. This captures the following (p.c. John Whitman):

(i) those few

However, there are some differences between a quantifier like many, which can be either strong or weak, and numerals. For example, if we replace the numeral in example (15) with many, then such phrases become bad:

(ii) * those many
(ii) * the beautiful many of those girls

This suggests that many cannot behave like nominals, unlike numerals.

15 Two remaining facts that we need to explain are: (i) quantifiers cannot be scrambled whereas NC’s can; (ii) quantifiers take GEN-marked bare NPs as their complement in the partitive construction whereas NC’s cannot. At this point, it is not clear that both of these directly follow from the proposed structure.
indefinite NP which has a presupposed interpretation (cf. Diesing (1992), 
Enç (1991)). Support for this comes from the fact that ACC-marked NP 
and NC cannot express "one of the students" unlike in a real partitive:

(17) * John-wa [gakusei-tati]-o hitori paatii-ni yonda 
    J-TOP student-PL-ACC 1-(CL) party-to invited 
    '(Intended) John invited one (of the) students to the party.'

The same restriction is also observed with nominative (NOM)-marked 
NPs:

(18) * [gakusei-tati]-ga hitori paatii-ni kita 
    student-PL-NOM 1-(CL) party-to came 
    '(Intended) One (of the) students came to the party.'

Since both NOM-marked NPs and ACC-marked NPs show the same 
behavior, I take these cases as an agreement mismatch between a Num 
head and its complement NP.\footnote{Within a checking theory, NP moves to the Spec of NumP where it can 
get its feature checked. Since a number feature such as [+/- plural] 
between the NP and the head Num does not match, the representation 
becomes illegitimate.}

3. Consequences

3.1. Inoue's (1978) data

The following sentence, taken from Inoue (1978), contains an ACC-
marked complex NP and an NC which associates with the complex NP. 
This sentence is a problem in that when the NC is an exact number, such 
as \textit{ni-ko} "two-CL," then the sentence is awkward whereas when it is an 
approximate number such as \textit{ni,san-ko} "two,three-CL," then the sentence is 
well-formed (Haig (1980)).

(19) kare-wa [e tundeatta] takusan-no mikan-bako]-o 
    he-TOP piled-up many-GEN orange-box-ACC 
    rojoo-ni ??ni-ko / ni,san-ko nagesuteta 
    road-onto 2-CL / 2,3-CL threw-away 

    'He threw away ??two / two or three of the many orange 
    boxes which were piled up onto the road.'
This sentence was originally pointed out by Inoue (1978) as a counter-example to the Q(uantifier)-float analysis of NC, which derives (20b) from (20a) by a transformational rule called Q-float:

(20) a. (John-ga) san-satu-no hon-o (katta)  
   (J-NOM) 3-CL-GEN book-ACC (bought)  
   ‘(John bought) three books.’

b. (John-ga) hon-o san-satu (katta)  
   (J-NOM) book-ACC 3-CL (bought)

According to the Q-float analysis, sentence (19) with *ni,san-ko “two, three-CL” should be derived from the following sentence:

(21) *kare-wa [takusan-no ni,san-ko-no tundeatta]  
    he-TOP many-GEN 2,3-CL-GEN piled-up  
    mikan-bako]-o rojoo-ni nagesuteta  
    orange-box-ACC road-onto threw-away

As Inoue argues, the input of the transformation is already ungrammatical as illustrated in (21), but the outcome is grammatical as seen in (19) with *ni,san-ko “two, three-CL.”

In the next section, I will show that this contrast between the exact number and the approximate number follows from the proposed analysis.

3.2. Resolution to Inoue’s paradox

Regarding the contrast between *ni-ko “two-CL” and *ni,san-ko “two, three-CL,” let us ask the following questions: what is the difference between the two expressions? Why does the approximate number improve the awkwardness of the exact number in (19)?

This contrast is explained by a general restriction on agreement which we have seen in the previous section between a plural morpheme -tati-marked NP and its NC. The generalization is that when the head of NumP bears some (specific) number feature, the associated NP cannot contain a number-related element. In the following pair, (22a) is fine but (22b) is ill-formed since in (22b), the head of NumP san-nin “three-CL” bears a specific number feature and at the same time the NP contains a number-related element, hati-nin “eight-CL”:

(22) a. John-wa [gakusei-tati]-o san-nin paattii-ni yonda  
    J-TOP student-PL-ACC 3-CL party-to invited  
    ‘John invited three students to the party.’
b. * John-wa [hati-nin-no gakusei-tati]-o san-nin
   J-TOP 8-CL-GEN student-PL-ACC 3-CL
   paatii-ni yonda
   party-to invited

   '(Intended) John invited three (of the) eight students to the party.'

   Coming back to Inoue's sentence, this feature matching requirement
   explains the awkwardness of the sentence with ni-ko "two-CL." Ni-ko
   "two-CL" in the head of NumP has a conflict with the NP containing
   takusan-no "many-GEN." I assume that this NP occupies the Spec of
   NumP and enters a Spec-head agreement with the head NC. On the other hand, the approximate number ni,san-ko "two, three-
   CL" is acceptable in (19). Suppose ni,san-ko "two, three-CL" is a head Q
   which takes a DP complement containing the complex NP with takusan-no
   "many-GEN." Then, unlike the previous example, there is no number
   feature mismatch between the NP and the head of NumP within the DP
   since in this structure the head Num is only specified for [+plural]; hence,
   there is no conflict between the complex NP containing takusan-no "many-
   GEN" and the Num head.

---

17 I assume the following: when NP contains a number-related element,
the head Num can bear only a [+/− plural] feature. When the head of
NumP bears a specific number feature, NP cannot contain any number-
related element.

18 Inoue's sentence with the exact number is not as awkward as (22b).
This may be because takusan-no "many-GEN" can be interpreted as an
adjective modifying the noun (such as big in big orange boxes) which does
not bear a specific number feature.

19 This should be contrasted with a partitive interpretation expressed
with uti "out of." In this case, a phrase headed by uti (which is an adjunct,
hence, does not enter Spec-head agreement with the head of NumP) can
contain a number-related element whose number feature is different from
the head of NumP, thus the whole phrase successfully expresses the
partitive interpretation of "three of the eight students."

(i) John-wa [[hati-nin-no gakusei-tati]-no-uti-no san-nin]-o
   J-TOP 8-CL-GEN student-PL-GEN-out-of-GEN 3-CL-ACC
   paatii-ni yonda
   party-to invited

   'John invited three of the eight students to the party.'
This analysis predicts that *ni,san-ko “two, three-CL” behaves in the same way as quantifiers rather than as NCs in Inoue’s example. This prediction is indeed borne out. First, scrambling of *ni,san-ko “two, three-CL” is ill-formed, just like the scrambling of quantifiers.20

(23) *ni, san-ko kare-wa [[e tundeatta] takusan-no
2,3-CL he-TOP piled-up many-GEN
mikan-bako]-o rojoo-ni nagesuteta
orange-box-ACC road-onto threw-away

’(Intended) He threw away two or three of the many orange boxes which were piled up onto the road.’

Second, the classifier -ko is optionally dropped from *ni,san-ko “two, three-CL” in (19), as shown in (24a), whereas it cannot be dropped from an NC such as ni-ko “two-CL” as in (24b):

(24) a. kare-wa [[e tundeatta] takusan-no mikan-bako]-o
he-TOP piled-up many-GEN orange-box-ACC
rojoo-ni ni, san_ nagesuteta
road-onto 2,3_ threw-away

’He threw away two or three of the many orange boxes which were piled up onto the road.’

b. *kinoo John-ga hon-o ni_ katta
yesterday J-NOM book-ACC 2_ bought

’(Intended) John bought two books yesterday.’

_________________________
20 Note that *ni,san-ko “two, three-CL” can be used as NC. In this case, scrambling is not ill-formed:

(i) ni,san-satu John-ga hon-o t katta
2,3-CL J-NOM book-ACC bought
’John bought two or three books.’

As we predict, in this example, the classifier cannot be dropped as shown in (ii):

(ii) *ni,san-_ John-ga hon-o t katta
2,3-CL J-NOM book-ACC bought
’(Intended) John bought two or three books.’
Third, *ni,san-ko* "two, three-CL" in (19) can appear in the position $\alpha$ of the partitive construction: [NP-GEN $\alpha$] (Recall that NCs cannot appear in the position $\alpha$):

(25) kare-wa [[[e tundeatta] takusan-no]mikan-bako]-no
    he-TOP piled-up many-GEN orange-box-GEN
    ni, san-ko]-o rojoo-ni nagesuteta
    2,3-CL-ACC road-onto threw-away

'He threw away two or three of the many orange boxes
which were piled up onto the road.'

The data in (23) through (25) strongly suggest that *ni,san-ko* "two, three-CL" in (19) heads its own projection QP dominating DP. In this section, the contrast in Inoue's data between the exact number and the approximate number was shown to follow naturally from the proposed analysis of nominal phrases.

4. Conclusion

This paper has argued that the articulated structure of nominal phrases contains two distinct categories Quantifier Phrase and Number Phrase; the head $Q$ takes a DP complement whereas the NumP which may appear as a complement of $D$ takes an NP complement. I have provided arguments based on Japanese data to support this articulated structure of nominal phrases. The differences between quantifiers and NCs were shown to follow from the proposed analysis. The contrast in Inoue’s data was also explained.

---

21 There is a question of what makes it possible that *ni,san-ko* "two, three-CL" appears in Q but not *ni-ko* "two-CL" or *san-ko* "three-CL." I think that *ni,san-ko* "two, three-CL" in Inoue’s example is a quantifier; it means not just "two or three" but allows more flexibility in number, which is close to English *a few.*
Appendix I. The Partitive Structures in Japanese

Let us consider the structures of nominal phrases yielding partitive interpretations in Japanese. The difference between quantifiers and NCs that we have seen in section 1 needs to be accounted for. I propose the following structures for the Q partitive ((26)) and the NC partitive ((27)):

(26) 'many of the students'

\[
\begin{array}{c}
\text{QP} \\
\quad \text{Q'} \\
\quad \text{DP} \\
\quad \text{gakusei-no} \\
\quad \text{student-GEN} \\
\quad \text{ooku} \\
\quad \text{many} \\
\end{array}
\]

(27) 'three of the students'

\[
\begin{array}{c}
\text{DP} \\
\quad \text{NumP} \\
\quad \text{XP} \\
\quad \text{Num'} \\
\quad \text{NP} \\
\quad \text{pro} \\
\quad \text{san-nin} \\
\quad 3-\text{CL} \\
\quad \text{sono-gakusei-tati-no-uti-no} \\
\quad \text{that-student-PL-GEN-out-of-GEN} \\
\end{array}
\]

In the case of the Q partitive (26), Q takes DP (a definite NP) complement. In the case of NC partitive (27), I hypothesize that there is a null category (pro), which is a complement of NumP and that a phrase headed by uti "out of" appears in a position adjoined to NumP. The crucial difference is that the nominal category denoting the "whole" part of the partitive interpretation is DP which is a complement of Q in the Q partitive construction, whereas the nominal category denoting the "whole" part of the partitive interpretation is the maximal projection headed by uti "out of", which is an adjunct of NumP. That is, Q takes a DP complement in the Q partitive whereas NC takes an adjunct phrase headed uti "out of" in the NC partitive. This structural difference is supported by the following fact. A relative clause modifier cannot appear between DP and Q in (26) but it can between the maximal projection headed by uti and NC in (27). Assuming that a relative clause modifier adjoins to a maximal projection NumP, it cannot intervene between the DP complement and Q (as in (28a)), however, such intervention is possible between an adjunct phrase headed by uti and NumP (as in (28b)).
(28) a.  * [QP [Q' [DP gakusei-no] [CP e Chomsky-no hon-o katta] 
         student-GEN C-GEN book-ACC bought 
         [Q ooku]]] 
         many

   '(Lit.)many [that bought Chomsky's books] of the student'

 b.  [DP [NumP [XP sono-gakusei-tati-no-uti-no] 
         that-student-PL-GEN-out-of-GEN 
         [NumP [CP e Chomsky-no hon-o katta] 
         C-GEN book-ACC bought 
         [NumP [NP pro ] [Num yo-nin]]]]] 
     4-CL

   '(Lit.)the four [that bought Chomsky's books] of those students'
   'the four of those students that bought Chomsky's books'

(28a) is ill-formed because, as is predicted by the structure in (26), there is
no maximal projection for the relative clause to adjoin to.\(^{22}\) (28b) is well-
formed since gakusei-no-uti-no "student-GEN-uti-GEN" adjoins to NumP,
and so does the relative clause.

Appendix II. The Partitive Structures in English and Japanese

In English, 'many of the students' and 'three of the students' are
usually analyzed as having the same structure (Jackendoff (1977), Abney
(1987), Mallén (1989)). The following is Mallén's structure for the partitive
construction:

\[(29) \]

\[
\begin{array}{c}
\text{QP} \\
\text{Q'} \\
\text{Q} \\
\text{DP} \\
\text{many or three} \\
\text{of the students}
\end{array}
\]

---

\(^{22}\) I assume that right-adjunction of the relative clause to the DP is not
available since Japanese does not allow modifiers to appear to the right of
modifiees.
The quantifier *many* or the cardinal element *three* is under Q, taking DP as its complement. Of is realized as a Case marker for the DP. Unlike this analysis, the proposed analysis for the partitive construction in Japanese makes a distinction between Q and NC. This difference between English and Japanese has to be accounted for. I speculate that the difference comes from the nominal nature of NC. Since Japanese numbers always have to appear with classifiers which are nominal in nature, that makes NC necessarily nominal. Furthermore, there is always agreement between a classifier and a noun. If this agreement is satisfied by some local configuration between them, such as the Spec-head configuration, then, given that presence of a classifier necessarily requires the presence of a numeral cliticizing to it, we can expect that the NC occurs within a DP projection. On the other hand, since English does not have classifiers like Japanese does, numerals can appear in a Q position as well as a Num position.

References


Ergativity In Malagasy

Ignazio M. Mirto
Cornell University

1. Introduction

Some researchers (Cena (1979), De Guzman (1983-1986), Gerdts (1987)) have recently challenged the long-standing belief that Philippine languages belong to the nominative/accusative (NOM/ACC) type. They maintain that the morphosyntax of languages such as Ilokano can be better understood if an ergative-absolutive (ERG/ABS) analysis is adopted. This paper proposes an ERG/ABS analysis for Malagasy, a Malayo-Polynesian language spoken in Madagascar and unvaryingly analyzed as NOM/ACC.1

Sentences (1-2) illustrate two basic clause types in Malagasy:2,3

(1) a. Sas(a)- an(a)- dRasoa ny lamba.
   wash- ANA- Rasoa the clothes
   ‘Rasoa is washing the clothes.’
   [K 1976:257]

b. Sotro-in(a)' ny saka ny ronono.
   drink-INIA the cat the milk
   ‘The cat is drinking the milk.’
   [RR 1966:100]

(2) a. M-an-dainga ami- n(a)- dRakoto foana Rasoa.
   TNS-AN-lie to- NA- Rakoto always Rasoa
   ‘Rasoa always lies to Rakoto.’

---

* For their help, kindness, and patience my warmest thanks go to Nunzio La Fauci, Soeur Lorette, Carol Rosen, John Wolff, and two anonymous reviewers. Responsibility for errors and shortcomings is mine.

1 The variety studied here is Merina, the major dialect.

2 Throughout the paper translations and glosses shown may not be those actually given by the original author.

3 The phonemes within parentheses drop. In Malagasy, affixation often phonologically affects the root and sometimes the affix itself. The rules are particularly complex (see Rajemisa-Raolison (1966)). In (1a) and (2a), the d that precedes Rasoa and Rakoto is epenthetic.
b. M-i-aina ianao.
   TNS-I-breath you
   'You are breathing.'

Sentences such as (1) will be referred to with the descriptive name SUFFIXAL AGENT clauses, while those like (2) will be called NON-SUFFIXAL AGENT clauses. Clearly, this terminology is based on word order; while in (1) the agent is attached to the verbal suffix, in (2) it is a free-standing nominal.

On the surface, the sentences in (1) and those in (2) differ in three ways: (a) word order (the agent attaches to the verb only in (1)), (b) position and type of affix, (c) tense marking (in (2), the prefix m- overtly marks the present tense, while in (1) no such overt marking occurs for the present tense).

1.1. The ERG/ABS analysis

Under this analysis, sentences like (1) exemplify the basic monostratal transitive type, while those in (2) instantiate monostratal intransitive constructions. In these sentences, the rightmost NP (ny lamba, ny ronono, Rasoa, ianao) is always an absolutive (ABS). The different morphology (position and type of affixes and present tense marking) and word order that characterize the two types depend on the syntactic status of the final ABS. In sentences such as (2), i.e. those where the verb root is prefixed with an-/i and with overt tense marking for the present tense, the final ABS bears the 1 grammatical relation (GR), while the final ABS of sentences such as (1) is never a 1. In particular, in sentences such as (1) the suffixes -ana/-ina signal that the final stratum contains the two nuclear terms (1, 2).

With regard to word order, the ERG/ABS analysis maintains that the linearization rule for Malagasy is as shown in (3):

(3) P-(ERG)        (3)         ABS

Sentences like (1) may have a counterpart with finally intransitive morphology. Sentence (4) shows the counterpart of (1a):

(4) M-an-(s)asa ny lamba Rasoa.
   TNS-AN-wash the clothes Rasoa
   'Rasoa is washing the clothes.'

---

4 In certain environments, the suffix -ana becomes -ena (see Rajemisa-Raolison (1966:98)).
Sentences like (4) have the characteristics of non-suffixal agent clauses: the root is prefixed with the same kind of affixes, and the agent is the rightmost term.

According to the ERG/ABS analysis presented here, sentence (4) is to be analyzed as the detransitivized version of (1a). In particular, (4) instantiates the 2-to-3 retreat construction (cf. Davies (1984)).

The diagrams below illustrate the structures for the three types of sentence introduced:

\[(5) \quad \begin{array}{ccc}
    & 1 & 2 \\
    P & \text{sasandRaso} & \text{ny lambo} \\
    & \text{sotroin'ny saka} & \text{ny ronono}
\end{array} \quad [\text{cf. (1a)}] \\
\]

\[(6) \quad \begin{array}{ccc}
    & 3 & 1 \\
    P & \text{mandainga} & \text{amindRakoto} \\
    & \text{Raso}\text{a}
\end{array} \quad [\text{cf. (2a)}] \\
\]

\[(7) \quad \begin{array}{ccc}
    & 2 & 1 \\
    P & \text{manasa} & \text{ny lambo} \\
    & \text{Raso}\text{a}
\end{array} \quad [\text{cf. (4)}] \\
\]

While (5) and (6) are monostral structures, in (7) the initial 2 demotes to 3. In (5), *Raso*a and *ny saka* 'the cat' are the final ergative, and as expected they attach to the verbal suffix. On the other hand, in (6) and (7), *Raso*a is the final ABS in that both structures are finally intransitive, as the presence of the verbal prefix *an-* shows. *Raso*a is thus located as the rightmost term. The nominals *amindRakoto* and *ny lambo* are final 3's and each intervenes between the verb and the final ABS.

1.2. The NOM/ACC Analysis

Keenan (1976), as well as many other authors (see below), would also consider sentences such as (2) to be intransitive and monostral. Their view on (1) and (4), however, is radically different. According to these authors, the basic active type is that in (4), regarded as transitive and monostral. Sentence (1a) is the passive of (4) and is to be glossed 'The clothes are being washed by Raso*a.' In Keenan's view, the suffixes -ana/ -ina in (1) mark the GOAL voice, one of the several types of passive in Malagasy.

As for the verbal prefix *an-* , the NOM/ACC analysis maintains that this morpheme marks transitive monostral clauses such as (4) and monostral intransitive clauses such as (2). These are clauses where the subject is a 1 at all levels.

According to the NOM/ACC analysis, the linearization rule is as shown in (8). The final 1 occupies the rightmost position whereas the 1-cho attaches to the verbal suffix.
(8) P-(1-CHO) (2) (3) 1

Diagrams (9-11) illustrate what the relational structures of (1), (2), and (4) would be within the NOM/ACC analysis.

(9)  
\[ \begin{array}{ccc}
P & 1 & 2 \\
P & \text{CHO} & 1 \\
sasandRaso & \text{ny lamba} & \text{[cf. (1a)]} \\
sotroin'ny saka & \text{ny ronono} & \text{[cf. (1b)]} \\
\end{array} \]

(10)  
\[ \begin{array}{ccc}
P & 3 & 1 \\
m-an-dainga & \text{ami-n-dRakoto} & \text{Raso} \\
\end{array} \]

[cf. (2)]

(11)  
\[ \begin{array}{ccc}
P & 2 & 1 \\
manasa & \text{ny lamba} & \text{Raso} \\
\end{array} \]

[cf. (4)]

In (9-11) the rightmost nominal is always the final 1. In a passive structure such as (9), Raso and ny saka ‘the cat’ are 1-cho’s and attach to the verb, while the final 3 in (10) and the final 2 in (11) intervene between the verb and the final 1.

1.3. Properties of the Rightmost Term

Malagasy allows only the rightmost term NP of the final stratum to be the target of a number of constructions such as relativization, clefting, or existential sentences (see Keenan 1976 for a complete list). In (12a), for example, the only NP that can be relativized, clefted, or otherwise targeted is ny zazavavy ‘the girl.’ (12b,c) exemplify the constraint on relativization. The two non-suffixal agent clauses show that only the rightmost term ny zazavavy can be the head of a relative clause.

(12) a. M-an-(s)asa \text{ny lamba ny zazavavy.}  
TNS-AN-wash the clothes the girl  
‘The girl is washing the clothes.’

b. Ny zazavavy (izay) manasa \text{ny lamba}  
the girl that wash the clothes  
‘the girl that is washing the clothes’

c. *Ny \text{lamba (izay) manasa ny zazavavy}  
the clothes that wash the girl  
‘the clothes that the girl is washing’

[Keenan 1976:265]

In (13), however, only ny lamba ‘the clothes’ can be relativized:
(13) a. Sasan'ny zazavavy ny lamba.
    wash-ANA-the girl the clothes
    'The girl is washing the clothes.'

   b. Ny lamba (izay) sasan' ny zazavavy
    the clothes that wash-ANA the girl
    'the clothes that the girl is washing’ [K 1976:265]

1.3.1. ERG/ABS

For the ERG/ABS analysis, the rightmost term in (12a) is a final 1. In the suffixal agent clause (13), however, the rightmost term ny lamba ‘the clothes’ is the final 2. These NP’s bear distinct grammatical relations, but are both absolutive. The ERG/ABS analysis captures the peculiar properties that the rightmost term possesses since under this analysis only the final ABS is a possible target for relativization, clefting, etc. In order to be the head of a relative clause, e.g., an NP must be or become the final ABS.

1.3.2. NOM/ACC

Under Keenan’s assumption, the rightmost final term always coincides with the final 1. To become a possible target for relativization, clefting or other constructions, an NP can or must undergo syntactic processes that make it a final 1. The relativization of the initial object of a transitive verb, for example, would impose the passive voice since only in the passive, according to the NOM/ACC analysis, does the initial object end up as the final 1.

2. Evidence for the ERG/ABS Analysis

This section shows that with regard to a number of characteristics of Malagasy the NOM/ACC analysis gives rise to some anomalies. If considered within the ERG/ABS analysis, however, these characteristics become commonplace and the anomalies cease to exist.

2.1. Imperative

Sentences such as (1) and (4) have a corresponding imperative:

(14) Sasa-o ny lamba.
    wash the clothes
    'Wash the clothes.' [K 1976:260]

---

5 Keenan (1976:259) points out that “all four voices have distinct imperative forms”. See § 4 for the two additional voices.
(15) M-an-asa lamba. [cf. (4)]
    TNS-AN-wash clothes
    ’Wash the clothes.’ [K 1976:259]

Sentence (14), with the suffix for the imperative voice -o, is the imperative morphologically related to sentence (1a) whereas (15), with the affix an-, is related to sentence (4).

2.1.1. NOM/ACC

As Keenan states (1976:259), the imperative in (15) is “sociologically marked.” It “is considered a highly brusque statement and a confrontation. It is used only in situations of stress and anger” (Keenan and Ochs 1979). The imperative in (14) is the unmarked one, the most common.

Across languages, the imperative is in general morphologically related to the basic voice. According to the NOM/ACC analysis, Malagasy turns out to be anomalous in that the most common imperative would use a passive morphology with attention “focused on the clothes and not on the agent of the action” (Keenan and Ochs 1979:154). This approach leads Keenan and Ochs (1979:154) to claim that “Malagasy is in fact one of the relatively few languages in the world that has a well-developed system for forming nonactive imperatives.” The uncommon formation of the imperative makes Malagasy a typologically rare language.

2.1.2. ERG/ABS

Within the ERG/ABS analysis, the distribution of the two types of imperative shown in (14-15) is predictable in that the most common imperative, the one shown in (14), would be related to suffixal agent clauses, the basic type, as is normally the case across languages.

2.2. Frequency of use

In Malagasy, suffixal agent clauses are used more frequently than the non-suffixal agent ones.6

2.2.1. NOM/ACC

Keenan, who considers the non-suffixal agent clauses as in (4) the most basic, notices himself that this choice is somehow stipulative. He writes (1976:259): “It is not obvious that passive ... sentences should be

6 Randriamasimanana (p.c. 1991) maintains that Malagasy will “accommodate between 35 and 55 percent of passives [suffixal agent clauses] in any one text”.

considered derived from the active ones ..., as with many Malayo-
Polynesian languages, we find many grammatically neutral situations in
which speakers show a marked preference for passive over active forms.”
Many other authors have made the same observation. Cousins (1873:28),
for instance, claims that “The Malagasy use passive verbs with far greater
freedom than is allowed in English.” Parker (1883:23-4) shares the same
view: “The Malagasy usually prefer the passive voice.” For unmarked
situations, the NOM/ACC analysis predicts the use of non-suffixal agent
clauses, that are regarded as active. Hence the reasons for the actual
distribution of the alleged active and passive forms remain unclear.

2.2.2. ERG/ABS

Adoption of the ERG/ABS analysis also eliminates the anomaly
pointed out above. Clauses such as (1) would be more neutral and
frequent whereas their detransitivized counterparts such as (4) would be
used under certain conditions (see § 3).

2.3. The Paradigm Identity Phenomenon

Malagasy is one of those languages that exhibit the Paradigm
Identity Phenomenon (see Rosen 1987). That is, the set of personal
pronouns used on verbs is identical to the one used on nouns to mark
possession. Observe the paradigms below (in Ferrand 1903:202):

(16)  
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I see</td>
</tr>
<tr>
<td>2</td>
<td>you see</td>
</tr>
<tr>
<td>3</td>
<td>he sees</td>
</tr>
<tr>
<td>4</td>
<td>we see (EXCL)</td>
</tr>
<tr>
<td>5</td>
<td>we see (INCL)</td>
</tr>
<tr>
<td>6</td>
<td>you see</td>
</tr>
<tr>
<td>7</td>
<td>they see</td>
</tr>
</tbody>
</table>

(17)  
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>my house</td>
</tr>
<tr>
<td>2</td>
<td>your house</td>
</tr>
<tr>
<td>3</td>
<td>his/her house</td>
</tr>
<tr>
<td>4</td>
<td>our house (EXCL)</td>
</tr>
<tr>
<td>5</td>
<td>our house (INCL)</td>
</tr>
<tr>
<td>6</td>
<td>your house</td>
</tr>
<tr>
<td>7</td>
<td>their house</td>
</tr>
</tbody>
</table>

The same formal identity is found for full noun phrases:
(18) a. Hit(a)- an(a)- dRabe izy.
    see ANA- Rabe he
    'Rabe sees/saw him.' [K 1992:22]

(19) a. Trano-n(a)' ny lehila\ny
    house-NA the man
    'a house of the man' [BE 86:90]

2.3.1. NOM/ACC

Keenan (1976) labels the pronouns in (16-17) as genitive, but does not address the identical formal marking shown in (18a) and (19a). Within the NOM/ACC analysis, the formal identity of the genitive case and the by-phrase is accidental in that it does not follow from anything peculiar to the Malagasy language. Analogously, the Paradigm Identity Phenomenon would amount to a coincidence.

Syntactically, for the NOM/ACC analysis the pronouns in (16) and Rabe in (18a) all head 1-cho arcs. The identical pronouns in (17) and the full NP ny lehilahy in (19a) should accordingly also head 1-cho arcs. This conclusion does not appear to be likely for at least two reasons. First, the structure of a noun phrase such as trano-n'ny lehila\ny would contain a 1-cho. This looks like an unnecessary complication; there is no evidence, cross-linguistically, that in the structure of a noun phrase the possessor is a 1-cho. The second reason has to do with the initial relation of a possessor. This can be initialized either as a 1 (e.g. Tzotzil) or as a 3 (e.g. Southern Tiwa). The morphology in (18a) and (19a) suggests that in Malagasy the possessor is an initial 1 rather than a 3. In languages showing the Paradigm Identity Phenomenon and where the possessor is an initial 1 (e.g. Tzotzil), the morphology of the possessor is identical to that of the ergative nominal rather than to the morphology of a 1-cho.

2.3.2. ERG/ABS

The identical formal marking of possessors and ergative nominals is frequent across a number of ergative languages. The ERG/ABS analysis would make Malagasy conform to the pattern found across these languages. It would also eliminate the anomaly of possessors analyzed as 1-cho that the NOM/ACC view brings about. Rather, in (19a), ny lehilahy 'the man' would head an initial 1-arc as Rabe does in (18a).\footnote{The structure in (19b) is motivated in Rosen (1987), a work on Tzotzil.}

(18) b. P 1  2
    hitan'dRabe izy
(19) b.  
P,2 1
tranon'ny lehilahy

2.4. Pronominal Indirect Object

The paradigms below show the pronominal system of Malagasy (from Rajaona (1972)):

<table>
<thead>
<tr>
<th></th>
<th>full /</th>
<th>reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>-ko</td>
<td>-o</td>
</tr>
<tr>
<td>2SG</td>
<td>-não</td>
<td>-ao</td>
</tr>
<tr>
<td>3SG</td>
<td>-ny</td>
<td>-ny</td>
</tr>
<tr>
<td>1PL.INCL</td>
<td>-ntsika -</td>
<td>-tsika</td>
</tr>
<tr>
<td>1PL.EXCL</td>
<td>-nay</td>
<td>-ay</td>
</tr>
<tr>
<td>2PL</td>
<td>-nareo</td>
<td>-areo</td>
</tr>
<tr>
<td>3PL</td>
<td>-ny</td>
<td>-ny</td>
</tr>
</tbody>
</table>

2.4.1. NOM/ACC

Within Keenan’s analysis, the pronouns in (20) are for genitives or 1-cho’s, those in (21) are nominative, while the forms in (22) mark accusative case. Non-suffixal agent clauses such as (23) are transitive and monostratal for the NOM/ACC theory and, as expected, the pronominal subject is drawn from the forms in (21), while the pronominal object comes from (22):

(23) Manaraka anao aho.
follow you I
‘I am following you.’ [R 1972:230]

None of the paradigms in (20-22) is for pronominal indirect objects. For the NOM/ACC analysis, Malagasy would have the unusual characteristic of lacking a specific set of pronouns for indirect objects. According to this theory, the same pronouns that mark pronominal direct objects would also mark indirect objects:

TNS-AN-give money 3PS 1SG
‘I gave money to him.’ [K 1976:251]

b. N-an-ome azy an- dRabe aho.
TNS-AN-give 3PS AN- Rabe 1PS
‘I gave it to Rabe.’ [K 1976:251]
In (24a), the pronoun *azy* is the indirect object, while in (24b) the same pronoun is used to represent a direct object.\(^8\)

### 2.4.2. ERG/ABS

In the ERG/ABS analysis, each of the paradigms in (20-22) has a distinctive function. The suffixes under (20) are ergative markers, the pronouns in (21) are absolutive, and finally those in (22) are for indirect objects. The diagrams below show that, as expected, in the sentences (23-24), *aho* is a final absolutive whereas *anao* and *azy* are final 3’s or 3-cho’s.

\[
\begin{align*}
\text{P} & \quad 2 & \; 1 \\
\text{P} & \quad 3 & \; 1 \\
\text{manaraka} & \quad \text{anao} & \quad \text{aho} & \quad \text{[cf. (23)]}
\end{align*}
\]

\[
\begin{align*}
\text{P} & \quad 2 & \; 3 & \; 1 \\
\text{P} & \quad 3 & \; \text{CHO} & \; 1 \\
\text{nanome} & \quad \text{vola} & \quad \text{azy} & \quad \text{aho} & \quad \text{[cf. (24a)]} \\
\text{nanome} & \quad \text{azy} & \quad \text{an-dRabe} & \quad \text{aho} & \quad \text{[cf. (24b)]}
\end{align*}
\]

In the non-suffixal agent clauses in (25), *anao* is a final 3 because of the 2-3 demotion that occurs in the 2-to-3 retreat structure. Sentence (26), another 2-to-3 retreat construction, shows that 3’s and 3-cho’s are marked alike. The identical marking of 3-s and 3-cho’s occurs in a number of languages (e.g. French, Italian).

### 2.5. Summary

This section showed that the ERG/ABS analysis has some advantages over the NOM/ACC analysis in that it eliminates at least four anomalies that the NOM/ACC view creates with regard to: (a) formation of the imperative, (b) distribution of suffixal and non-suffixal agent clauses, (c) the Paradigm Identity Phenomenon, and (d) the pronominal system.

### 3. Functional Diagnostics for Detransitivizing Constructions

The ERG/ABS analysis calls for a reconsideration of the relationship between a pair of sentences such as (1) and (4).

---

\(^8\) Of course, it might be claimed that (24a) is an instance of 3-to-2 advancement. The initial 2 *vola* ‘money’ would be chômeurized by the 3-to-2 advancement of *azy*. In other cases, however, a pronoun drawn from (22) has to be analyzed as a 3. See, e.g., (35) where the initial 3 *anao* ‘you’ can only be the final 3. The point at issue here is that for the NOM/ACC analysis there is no distinctive set of pronouns for pronominal 3’s.
Within the ERG/ABS analysis, sentence (1) is transitive and monostratal whereas (4) is an instance of the 2-to-3 retreat construction. It is well-known that, at the level of discourse conditions, detransitivizing constructions such as 2-to-3 retreat and antipassive have a number of semantic correlates. Detransitivized clauses have basically the same truth-conditions as their transitive counterpart, but are characterized by a reduced semantic transitivity in the sense of Hopper and Thompson (1980). A detransitivized clause can manifest its reduced semantic transitivity in several ways. Many of these affect the initial object: this can be less definite, non-referential, or may indicate a partitive meaning. Furthermore, detransitivizing constructions of this type generally have a non-perfective aspect or convey the meaning of habitual activity. If Malagasy, as we maintain, is an ergative language, we expect sentences such as (4) to exhibit some kinds of discourse conditioning as do recognized detransitivized clauses in other languages. The remainder of this section shows that sentences like (4) conform to this expectation.

3.1. Resultativity

Resultativity is a semantic feature related to transitive clauses. A resultative clause entails that the action will be successfully performed, i.e. brought to completion. This semantic feature can be grammaticalized in different ways. In English, e.g., the particle *up* generally implies completion of the action, as in (27).

(27) John will drink up the water.

In German, as Comrie (1976:46) exemplifies, “there is a contrast between kämpfen ‘fight’ (possibly without achieving anything) and erkämpfen ‘achieve by means of fight’, the latter referring to a process of fighting that leads up to some terminal point.” In a West Circassian dialect, Bzedukh

---

9 In purely syntactic terms, a clause is either transitive or intransitive. Unlike syntactic transitivity, semantic transitivity can be treated, as Hopper and Thompson (1980) do, as a scalar notion. Although these authors only use the term antipassive, their generalizations can be safely extended to the 2-to-3 retreat construction in that they point out (1980:268) that “the term ‘antipassive’ is here used in an extended sense — encompassing not merely the ‘canonical’ antipassive construction, in which A [actor] is the absolutive case and O [object] is oblique, but also any other construction in which A appears in some case other than the ergative, and O in some case other than that with which it is normally marked in the ergative clause”. 
(data from Hopper and Thompson (1980:268) quoting Anderson (1976)), resultative clauses have an antipassive counterpart. The transitive clause and the antipassive differ systematically. The former entails successful performance whereas the antipassive implies that the action will be carried out less completely. Hopper and Thompson (1980:269) also report that "similar phenomena are well known in the ergative languages of Polynesia."

In his *Structure du malgache*, Rajaona (1972:230) addresses the topic of resultativity:

le malgache envisage tout procès suivant deux axes aspectuels concourants, l’axe du résultat et l’axe de la durée. Tout procès est donc décrit, en malgache, avec implication ou sans implication de son aboutissement à un résultat ...

The author maintains that in the pair, shown below,

(28) Arak(a)-o ianao.
    follow-I you
    ‘I am following you.’ (successfully)
    ‘I can follow you.’ (Rajaona’s translation)  [R 1972:230]

(29) M-an-araka anao aho.
    TNS-AN-follow you I
    ‘I am following you.’  [R 1972:230]

sentence (29), the 2-to-3 retreat construction, does not entail anything about the result. On the other hand, sentence (28), the transitive clause in the ERG/ABS analysis, implies that the agent can or will be successful in performing the action of following someone.

Sentence (30) supports the idea that, in Malagasy, the detransitivized clause, unlike its transitive counterpart, describes a process that may not be effectively brought to completion.

(30) M-an-araka anao aho fa tsy mah(a)- araka.
    TNS-AN-follow you I but NEG be.able- follow
    ‘I am following you, but I can’t make it.’  [R 1972:239]

In Malagasy it seems to be possible to make apparently contradictory statements such as ‘I am following you, but I can’t make it’ on condition that 2-to-3 retreat clauses are used.

If Rajaona’s claim is correct, in Malagasy suffixal agent clauses are associated with resultativity, i.e. a characteristic of semantic high-
transitivity. On the other hand, the lack of this feature further motivates a 2-to-3 retreat analysis for non-suffixal clauses, that show signs of semantic low-transitivity.

The NOM/ACC analysis would predict the opposite: suffixal agent clauses should show signs of semantic low-transitivity in that they are regarded as passives, while non-suffixal agent clauses should show signs of semantic high-transitivity since they are claimed to be syntactically transitive. While this mismatch undermines the NOM/ACC analysis, it supports the ERG/ABS one that, on the contrary, makes the right predictions as for the matching of semantic and syntactic transitivity.

3.2. Given vs. New Object

One difference between the ergative clause and the detransitivized one can concern the definiteness of the direct object. This phenomenon, e.g., occurs in Eskimo where "the ergative/antipassive contrast signals an opposition between 'given' O[bject] vs. 'new' O[bject]" (Hopper and Thompson 1980:269).

Malagasy marks indefiniteness by means of null determiners as in (31-32) where lamba 'clothes' and taratasy 'letter', the objects of sasa 'wash' and vaky 'read' respectively, are bare noun phrases.

(31) M-an-(s)asa lamba Rasoa.
    TNS-AN-wash clothes Rasoa
    'Rasoa is washing clothes.'

(32) M-am-(v)aky taratasy aho.
    TNS-AN-read letter I
    'I am reading a letter.'    [F 1903:55]

In the other member of the opposition, the suffixal agent clause, the direct object must carry a definite determiner:

(33) a. Vaky-ko ny taratasy.
    read-1SG the letter
    'I am reading the letter.'    [F 1903:56]

b. Jono-ko ny marakely.
    fish-1SG the trout.
    'I am fishing the trout.'

10 Keenan also notices (1976:257) that "Semantically speaking, the subject NP of goal voice sentences [e.g. ianao 'you' in (28)] ... is best considered to be a kind of "endpoint" of the action".
(34) a.*Vaky-ko taratasy.
read-I letter

b.* Jono-ko marakely.
fish-I trout

The two ungrammaticalities in (34) show that, in this type of clause, the logical object must be definite. If the object of a transitive verb is indefinite the Malagasy cannot use a suffixal agent clause.

Sentences like (31-32) show a feature, indefiniteness of the object, that can be typically associated with a detransitivizing construction. In this respect, Malagasy behaves as other ergative languages do. In a pair formed by a transitive clause and its detransitivized counterpart only the latter can have an indefinite object. This, regardless of the fact that in Malagasy the 2-to-3 retreat construction can also have a definite object.

3.3. Summary

The ERG/ABS analysis holds that the non-suffixal agent clauses of Malagasy are instances of the 2-to-3 retreat construction. These clauses show features of semantic low-transitivity while their monostratal counterpart proves to have characteristics of semantic high-transitivity. This section showed that the non-suffixal clauses have some of those features that are typical of a detransitivizing construction.

4. The Intermediary and Circumstantial Voices

In addition to the constructions examined so far, Malagasy contains two more clause types that need to be considered: the Intermediary and Circumstantial voices.

4.1. The Intermediary Voice

This clause type, formed by prefixing the root with a-, has traditionally been considered to be a kind of passive. The word order and morphology are those found in suffixal agent clauses. The agent attaches to the verbal suffix and the present tense is not overtly marked. The rightmost term of a sentence in the intermediary voice is the direct object of a three-place predicate.\(^{11}\)

\(^{11}\) There are two types of sentences in the intermediary voice. In the type exemplified in (35-36), the verbal root is circumfixed. In the other type, exemplified below, the verb is only prefixed.
(35) A-tolo-n(a)' ny prezida anao ny loka.
   A-offer-ANA the president you the prize
   ‘The president is offering the prize to you.’

(36) N-a-joro-n(a)' ny ankizy t-eto io.
   TNS-A-put-ANA the children TNS-here that
   ‘The children put that there.’ [R 1972:490]

4.1.1. NOM/ACC

Keenan’s comments (1976:257) on the intermediary voice are succinct. According to the author, the subject NPs of a sentence in the intermediary voice “include patient NPs in sentences which have indirect objects, and often include certain types of ‘weak’ instrumentals as well.” The case of “weak” instrumentals is not exemplified (but see footnote 11), and the type in (36) is not discussed.

Within the NOM/ACC analysis, the intermediary voice, like the goal voice, is a passive and a sentence such as (35) would have the structure below:

(37) \[
\begin{array}{cccc}
1 & 3 & 2 \\
\text{P} & \text{CHO} & \text{1} \\
\text{a-tolo-n}' & \text{ny prezida} & \text{anao} & \text{ny loka} \\
\end{array}
\] [cf. (35)]

Under Keenan’s analysis, the prefix a- of the intermediary voice depends on two conditions: (a) the sentence must be a passive, and (b) it must contain a 3.

4.1.2. ERG/ABS

Under this analysis, the prefix a- in (35-36) is a valence extender that occurs in monostratal structures with a three-place predicate. In addition to the nuclear terms 1 and 2, the initial and final stratum of such structures also contains an extra argument of the predicate (e.g. 3, LOC).

(38) \[
\begin{array}{cccc}
1 & 3 & 2 \\
\text{a-tolo-n}' & \text{ny prezida} & \text{anao} & \text{ny loka} \\
\end{array}
\] [cf. (35)]

(i) A-didy ny lamba ny hety.
   A-cut the fabric the scissors
   ‘The fabric is being cut with the scissors.’ [PR 1966:24]

The type in (i) is probably what Keenan (1976) defines as “weak” instrumental.
Sentences (38-39) are monostratal structures that meet the conditions for the intermediary voice in that in their initial and final stratum the predicate initializes three arguments. The verb signals their presence by means of the prefix a-. In (24a,b), the initial stratum also contains three arguments, but the structure is not monostratal, hence the other condition for the intermediary voice is not met.

Sentence (40) and its structure in (41) show one case of 3-2 advancement.\textsuperscript{12}

(40) Tolo-r-a(\textit{na})-ko \ nyvary \ nyvahiny.
offer-ANA-I \ the \ rice \ the \ guests
'I offer the rice to the guests.' \hspace{1cm} [K 1976:258]

(41) \begin{tabular}{ccc}
P & 1 & 2 & 3 \\
& 1 & CHO & 2 \\
tolora(\textit{na})-ko & nyvary & nyvahiny
\end{tabular}

In the initial stratum of (41), the three-place predicate tolo 'offer' initializes three arguments, but because of the 3-2 advancement the structure is bistralal. Consequently, the sentence is not in the intermediary voice.

4.2. The Circumstantial Voice

In this clause type, an adjunct ends up as the rightmost term. In relation to this voice, Keenan and Ochs (1979:124) write:

'Circumstantial' here contrasts with active and passive. In an active verb, the agent is the subject. In a passive verb an object, usually the patient, is the subject. And in a circumstantial verb the subject is some circumstance of the action, such as the place or time at which the action was performed, the manner or purpose of the action, the instrument with which the action was performed, or the person for whose benefit the action was performed.

In (42-44), the initial adjuncts, ity savony ity 'this soap', ny ankizy 'the child', and telopolo dinie 'thirty pieces of silver', take the rightmost position. The verb root is circumfixed with the prefix \textit{an-/i-} and the suffix

\textsuperscript{12} The -r- between the root and the suffix comes from the ending \textit{tra} of \textit{tolotra} (see Rajemisa-Raolison (1966:98-9)).
-ana/-ina. The agent attaches to the verbal suffix. As with the sentences in (1), the present tense is not overtly marked.

(42) An-(s)asa-(a)n(a)’ dRaso a lamb a ity savony ity.
AN-wash-ANA Rasoa clothes this soap this
‘Rasoa is washing clothes with this soap.’ [K 1976:256]

(43) I-vidy-a(na)-ko mofo ny ankizy.
I-buy-ANA-1SG bread the child
‘I am buying bread for the child.’ [K 1976:256]

(44) N-am-(v)adiha-(i)n(a)’ i Jodasy an’ i Jeso Kristy
TNS-AN-betray-INA Judas AN Jesus Christ
telopolo dinie.
threeo pieces.of.silver

‘Judas betrayed Jesus Christ for thirty pieces of silver.’ [PR 1969:25]

4.2.1. NOM/ACC

In Keenan’s view, the circumstantial voice, along with the goal and intermediary voices, also derives from the alleged active voice (non-suffixal agent clauses) by deleting the initial m- (for present tense forms) and by adding the suffix -ana. Sentences like (42-44) would be relationally represented as in (45):

(45) P 1 2 OBL
     P 1 CHO 2
     P CHO CHO 1
   anasan- dRaso a lamb a ity savony ity
    ividiana- ko mofo ny ankizy
    namadihan’ i Jodasy an’i Jeso Kristy telopolo dinie

In (45), another passive construction, ity savony ity ‘this soap’, ny ankizy ‘the child’, and telopolo dinie ‘thirty pieces of silver’ head an oblique arc in the initial stratum. They advance first to 2 and then to 1 and are located in the rightmost position as required by the linearization rule (8). Rasoa, -ko, and i Jodasy, the final 1-cho’s, attach to the verbal suffix.

4.2.2. ERG/ABS

In sentences in the circumstantial voice the verb is prefixed and suffixed. In (42-44), the adjunct is the rightmost term, hence it is the final ABS:
In the second and final stratum of (46), the initial oblique advances to 2 thus causing the initial 2 to abandon its GR. The nominals *lamba* ‘clothes’, *mofo* ‘bread’, and *i Jeso Kristy* demote to 3. The final stratum contains a 1 and a 2 and, as expected, the verb takes a suffix. The presence of the prefix depends on two features of the final ABS: it must be an initial OBL and a final 2.

5. The Preposition *an-*

As sentences (47-53) illustrate, in Malagasy the preposition *an-* is found in varied environments. The distribution of this preposition highlights other shortcomings of the NOM/ACC analysis and provides further evidence for the ERG/ABS analysis.

5.1.1. Proper Nouns

Keenan (1992:21) notices that, in certain environments, proper nouns that are built with *ra-* and *i-* take the preposition *an-*. Demonstratives, only optionally, also have this property:

(47) M-am-(v)ono an- dRabe Rasoa.
   TNS-AN-kill AN- Rabe Rasoa
   ‘Rasoa is killing Rabe.’

(48) M-an-ome ny vola an- dRakoto aho.
   TNS-AN-give the money AN- Rakoto 1SG
   ‘I am giving the money to Rakoto.’

(49) N-a-tolo-n’ ny prezida an- dRabe ny loka.
   TNS-A-offer the president AN- Rabe the prize
   ‘The president offered the prize to Rabe.’

---

13 The 2-3 demotion in (46) only shows one logical possibility. The other one would be chômeurization. Sentence (44), where the initial 2 carries the preposition *an-*, suggests that the 2 demotes to 3 (see § 5).

14 According to Rajemisa-Raolison (1966:144), *an-* is the reduced form of *ana*. 
50) A-tolo-ko an’ io zazakely io ny vary.
     A-offer-I AN that baby that the rice
     ‘I am offering the rice to that baby.’

5.1.2. Locatives

The preposition an- can also mark locatives and incorporate in certain place names:

51) Any an-tsena Rakoto sy ny zana-ny.
     there AN-market Rakoto and the brother-his
     ‘Rakoto and his brother are at the market.’ [RR 1966:144]

52) An-tsira-be
     AN-salt-big
     ‘at the place of great salt’ [K 1976:298]

5.1.3. Possessors

The possessor of verbless sentences such as (53) is preceded by an-:

53) An- dRakoto ny trano.
     AN- Rakoto the house
     ‘The house is Rakoto’s’

5.2. The NOM/ACC Interpretation

For Keenan (1976/1992) the preposition an- is an accusative marker.

5.2.1. Proper Nouns

This view is consistent with sentence (47), regarded by Keenan as transitive, but creates a number of problems with (48-50). In (48), the nominal ny vola ‘the money’ would be the final 2 of a monostratal structure, hence the sentence seems to contain two final 2’s. As for (49-50), if an-dRabe and an’io zazakely io ‘that baby’ were a 2 as Keenan states, these sentences would be finally transitive and should therefore show the morphology of non-suffixal clauses, the alleged active type in the NOM/ACC analysis.

5.2.2. Locatives

Given the NOM/ACC analysis, the use of an- as a locative marker is unexpected. Cross-linguistically, it is common to find languages using the same formal marking for indirect objects and some locatives (e.g. French,
Korean), but no language seems to mark locatives with the same morpheme used for direct objects.

5.2.3. Possessors

For Keenan (1976:298), the morpheme *an-* in (53) is no longer a preposition, but rather a verb whose sole function is to predicate possession. Sentence (54) below suggests that in the structurally parallel sentence (53) the morpheme *an-* cannot be a predicate as Keenan maintains. If it were, we would expect its occurrence also in (54).

(54) Ahy ny vola.
1SG the money
'The money is mine.'

5.2.4. Summary

The same morpheme is thus interpreted in three different ways: (i) as an accusative marker, (ii) a locative marker, (iii) a verb whose sole function is to predicate possession.

5.3. The ERG/ABS Interpretation

For the ERG/ABS analysis, the preposition *an-* marks final 3's and 3-cho's, an identical marking that in Malagasy also occurs for pronouns (see § 2.4).

5.3.1. Proper Nouns

In sentence (47), a 2-to-3 retreat construction, *Rabe* is the final 3. Sentence (48) is another case of 2-to-3 retreat construction. The initial 2, the nominal *ny vola* 'the money', also demotes to 3 in the final stratum and causes the chômage of *Rakoto*, the initial 3. Sentences (49) and (50) are monostratal ditransitives. *Rabe* and *io zazakely io* 'that baby' are final 3's.

5.3.2. Locatives

It was noted above that in many languages the preposition used for indirect objects is also used as a locative marker. According to the ERG/ABS analysis, Malagasy would use *an-* not only for final 3's and 3-cho's but also for locatives, an identical marking recurrent across languages.

---

15 The presence of the pronoun *ahy*, drawn from the paradigm for indirect objects (22), supports the idea that in (53) *an-dRabe* is a final 3 (see 5.3.3).
5.3.3. Possessors

For the ERG/ABS theory there is no need to consider an- as a predicate of possession. Under this analysis, Malagasy would encode sentential possession by marking the possessor with dative case, a device that a number of other languages use. In French, for example, in a sentence such as (55) the possessor is an indirect object as the preposition à 'to' shows:

(55) L' argent est à moi. (French)
the money is to me
'The money is mine.'

French and Malagasy encode sentential possession by using similar structures. The two languages differ with regard to two parameters. First, in French the possessor is initialized as a 3 whereas in Malagasy it is an initial 1. Second, French requires non-verb predicates to be auxiliated, while Malagasy has no such requirement since it allows nouns to be final predicates.16

5.4. Summary

The ERG/ABS analysis allows us to formulate a unitary interpretation for the preposition an-. Its analysis as a preposition for indirect objects accounts for its apparently complex distribution. The NOM/ACC analysis fails to recognize this unity. Its account is fragmentary in that the same morpheme gets a different interpretation for each of the environments in which it is found.

---

16 Under the ERG/ABS analysis, in the initial stratum of the structure for (53-54) ny tranô and ny vola head a P-arc and a 2-arc (they are multiattached, see diagram (19a)). As the presence of the article reveals, however, these are NP’s rather than predicates. They head a final 1-arc and, since the possessor is finally a 3, ny tranô and ny vola are the final ABS’s of intransitive clauses. As predicted, under normal conditions they take the rightmost position. On the other hand, a noun whose final grammatical relation is just P would be sentence initial as rule (3) requires:

(i) a. mpianatra Rakoto.
   student Rakoto
   'Rakoto is a student.'

   b. P 2
   P 1

   mpianatra Rakoto

(RR 1966:30)
6. Conclusion

Malagasy has pairs of clauses that basically share the same truth-conditions, but that differ in word order, morphology, and conditions of use. Traditional grammarians like Parker (1883) thought of these pairs as the familiar active/passive opposition. Non-suffixal agent clauses were regarded as active, while those with a suffixal agent had to be their passive counterpart. This view has gone unchallenged, although some authors, concerned with problems of translation, have occasionally noticed its oddity. Cousins (1873:28), for example, observes:

In many instances where we should be content with making the object of an active verb [non-suffixal agent] definite or emphatic, they [Malagasy speakers] would prefer to adopt the passive construction [suffixal agent].

Ferrand (1903:55-6) makes a similar observation:

La traduction de la phrase active française: je lis la lettre, par son équivalent littéral: mamaky ny taratasy aho, serait inélégante, presque incorrecte.

On the other hand, under the ERG/ABS analysis the morphology and word order of the two clause types in each pair depend on the relational status of the final ABS. In suffixal agent clauses, the final ABS is never a 1, while in non-suffixal agent clauses the final ABS does head a 1-arc. It was shown that the ERG/ABS analysis has a number of advantages over the traditional NOM/ACC one. Some typological oddities disappear: what was regarded as anomalous or unusual turns out to be cross-linguistically common, and for each pair we find the expected matching between syntactic and semantic transitivity. In the pronominal system each paradigm has a distinctive function as is normally the case, and a number of phenomena such as the distribution of the preposition an- can be interpreted in a simpler fashion.

References


VP-fronting, *Do*-Support and Extended IP in English

Erika Mitchell
Cornell University

Pollock’s 1989 proposal that Tense and Agreement morphemes may head separate functional phrases has suggested to some researchers that other inflectional morphemes may also head their own functional phrases. In addition to phrases headed by Tense and (subject) Agreement, phrases for object Agreement, Aspect and Voice have also been proposed to exist in a number of languages (Carstens and Kinyalolo, 1989; Rivero, 1990; Ouhalla, 1990, 1991; etc.). Since phrase structure rules are assumed to be maximally invariant across languages, if there is evidence for a certain phrase in one language, it is predicted that the presence of that phrase may be indicated in other languages as well. In particular, there have been numerous independent proposals that the expansion of IP into its functional components includes a VoiceP located in close proximity to, but separate from, the VP (Rivero, 1990; Mitchell, 1991). In light of these proposals, this paper will re-examine some arguments from a 1979 paper by Akmajian, Steele and Wasow (henceforth, ASW) that show clear evidence from English for the existence of a separate phrase headed by Voice located immediately above VP in English, lending support to the previous cross-linguistic analyses of this category.

ASW’s arguments are based on the phenomenon conventionally known as VP-fronting; as a consequence of the close scrutiny presented below of the inflectional processes involved in VP-fronting, the need will also emerge for a re-examination of the process known as *do*-support. The rule responsible for the automatic insertion of *do* in certain ‘VP’-fronting contexts will be considered, and it will be shown how this same rule can be readily extended to cover all instances of non-main verb *do* without the

* Comments and suggestions from numerous people have greatly improved the quality of this work. In particular I wish to thank Wayne Harbert and Wayles Browne for keeping me honest and on track. I am also especially grateful to Deb Yeager, Lynn Santelmann and Michael Bernstein for asking the right questions and pointing out where more work had to be done. Thanks as well to audiences at the Cornell Tuesday Colloquium and the January 1993 LSA meeting in Los Angeles, and the two anonymous Working Papers reviewers for their comments and suggestions. Naturally, I alone am responsible for any shortcomings.

E. Rubin and M. Bernstein (eds.),
© 1993 by Laurent Dekydtspotter
need for positing any construction-specific or otherwise stipulative processes. All contexts in which non-main verb do appears will be investigated, including VP-fronting, ellipsis, Right-Node Raising, inversion associated with a fronted adverb, yes/no questions, non-subject wh-questions, and negation and affirmation with main verbs and imperatives, as well as the unexpected absence of do in subject-wh-questions. The do which obligatorily appears in each of these contexts will be attributed to the application of a unique general rule of do-insertion and its interaction with the principles of Universal Grammar.

1. Akmajian, Steele, and Wasow (1979)

ASW’s 1979 paper represented a culmination of several decades’ work on the auxiliary system of English. It attempted to unite the most successful conclusions of two conflicting lines of research, that started by Ross (1969) which showed that modals, and presumably auxiliary verbs as well, are an integral part of the verbal projection system, with the traditional arguments, due to Chomsky (1957), that the possible well-formed combinations of modals and auxiliaries in English are determined by phrase structure rules. With the adoption of INFL in the early 1980s as a catch-all for any element associated with verbal inflection, many of ASW’s points became superfluous; however, renewed interest in the internal structure of IP has made ASW’s arguments once again crucial for the study of Universal Grammar.

1.1. ‘VP’-Fronting Fronts more than VP

One of the main facts that ASW called attention to is that the process commonly known as VP-fronting actually fronts more than just the verb and its object. They started by showing that not only can the verb and its object be fronted, but that the passive auxiliary be, or simply the predicate itself, may be fronted in certain contexts:

(1) a. Bill thought Mary had fixed his car, and [fixed his car] she had.
 b. Bill thought his car was being fixed, and [being fixed] it was.
 c. Bill thought that Mary was a capable mechanic, and [a capable mechanic] she was.

However, the amount of material that is fronted in any given context is not freely variable, but strictly determined by the combination of auxiliaries used in the phrase. For instance, no other auxiliary may be fronted along with the verb:
(2) a. *Bill was sure that Mary must have fixed his car, and [have fixed his car] she must.

b. *Bill was sure that Mary had been fixing his car, and [been fixing his car] she had.

In the absence of the progressive auxiliary be, passive be is preferred in the unfronted position:

(3) a. ??Bill thought his car had been fixed by Mary, and [been fixed by Mary] it had.

b. Bill thought his car had been fixed by Mary, and [fixed by Mary] it had been.

At the same time, the presence of progressive be makes the fronting of passive be obligatory:

(4) *Bill thought his car was being fixed, [fixed] it was being.

To explain these facts (as well as others involving such independent processes as ellipsis and subcategorization) ASW proposed that the VP is not a simplex constituent, but a phrase composed of three bar-levels, with the auxiliaries have, (progressive) be and (passive) be each generated on a separate level:

(5) \[ \begin{array}{c} V^3 \\ (have) \\ V^2 \\ (be) \\ V^1 \\ (be) \\ V... \end{array} \] (ASW, 1979 (61))

In generating aspectual have and be in the VP rather than in the same position as the modals and tense (AUX), this proposal represented a continuation of the then standard analysis of these auxiliaries, whose origins are usually attributed to oral presentations by Klima (1966) and (Jackendoff, 1972; Stockwell, et. al., 1973) and an article by Rosenbaum and Lochak (1966).1 ASW’s approach differed from previous proposals by Jackendoff (1972) and Emonds (1976) in that aspectual have and be were now each given unique positions within the verb phrase, and passive be

---

1 The same analysis was worked out previously and presumably independently by Gleason (1965). However, Gleason’s text seems to have been overlooked in the literature of the time.
was posited as having a unique VP position as well. A further difference was that the process ASW used to move the auxiliary verbs into higher empty positions in VP and on to Tense in AUX was ‘restructuring’, rather than the Have/Be-Raising Rule that had been used previously (Jackendoff, 1972, 1977; Emonds, 1976; also Gleason, 1965). According to ASW, copular be participated in ‘restructuring’ as well, but, following Chomsky (1957), other verbs generated under V^0 had to remain in their base positions throughout the derivation.

In such a system, all of the ‘VP’-fronting facts can be explained if it is assumed that what is fronted is actually V^1, but that the process is bleed by the prior application of ‘verb restructuring’. First the phrase structure rules are used to create the base, then ‘restructuring’ applies, shifting copular be or passive be out of V^1 to a higher position, provided progressive be is absent. When V^1 is then fronted, copular be and passive be will no longer be contained within that section of the verb phrase, so it will appear as if only the main verb and its object have been fronted. If, on the other hand, progressive be is present, copular be and passive be will not be able to ‘shift’ out of V^1, resulting in the obligatory fronting of these auxiliaries along with the verb.

ASW’s analysis of ‘VP’-fronting and their conclusions based on their investigation of the process are directly relevant for contemporary theory. As ASW note, the fact that a syntactic process is sensitive to the level V^1 constitutes strong evidence for the existence of that level in the syntax. In modern terms, ASW’s V^1 would correspond to VoiceP, and V^1-fronting to VoiceP-fronting. Since other auxiliaries may not be fronted, but passive be must be included in fronted material if progressive be is present, there must be a phrase associated with the passive auxiliary that is higher than the VP but lower than any other functional phrase. The most likely interpretation of these facts is that a separate functional phrase exists between VP and that in which progressive be is generated, and this phrase is headed by passive be; hence there is evidence in English for positing a VoiceP.\footnote{Huang (1993) presents an independent argument, based on the interpretation of anaphors, that more than VP must be fronted in ‘VP’-fronting.}

ASW’s discussion of VoiceP-fronting also shows the need for generating the auxiliaries in a hierarchical structure rather than in a single position. They show that VoiceP must be located below the phrase containing progressive be, since the presence of progressive be blocks any movement by the passive auxiliary. At the same time, perfective have must be further from VoiceP than ‘ProgP’, since have prevents passive be from reaching tense, but does not block its escape from VoiceP; i.e., at least
one phrase must intervene between *have* and passive *be* for the *be* to escape to. In sum, these facts suggest that each of the auxiliaries are generated in separate phrases, in the following order:

\[ \text{PerfP} \]
\[ \text{Perf} \]
\[ \text{Perf}^0 \]
\[ \text{ProgP} \]
\[ \text{Prog}^0 \]
\[ \text{Prog}' \]
\[ \text{VoiceP} \]
\[ \text{Voice}^0 \]
\[ \text{Voice}' \]
\[ \text{Voice}^0 \] (VP)

Furthermore, ASW's facts also provide independent confirmation of the present view of verb movement. Namely, they show that all auxiliaries and copular *be* must move from their base-generated positions by S-structure, but that main verbs must remain in place, at least until LF. Pollock's arguments that auxiliaries verbs move in English but main verbs do not were based primarily on negation facts in French and a comparison between French and English adverb placement. The existence and position of NegP has not been universally accepted (Ouhalla, 1990, 1991; Cowper, 1991; Ernst, 1992), weakening to some extent the arguments for verb movement drawn from negation. The adverb placement data as evidence for verb movement may likewise be put into question, since adverbs might not always be adjoined to the same positions in every language, or adverbs might conceivably move, possibly yielding the same ordering data described by Pollock. However, the fact that passive *be* and copular *be* are able to escape VoiceP-fronting if progressive *be* is absent, but ordinary main verbs are never able to do so, defies explanation without a theory of verb movement consistent with that found in Pollock (1989).

VoiceP-fronting data also provide support for an analysis using feature-checking as the means by which bound affixes come to be associated with their lexical hosts (Chomsky, 1992) rather than traditional affix-hopping accounts. This is because certain affixation facts can be explained far more simply under a feature-checking account than with affix-hopping. In the feature-checking analysis, words are drawn from the lexicon bearing all relevant inflectional morphology; each individual morpheme must then be checked against its corresponding feature generated in an X^0 position in the phrase structure by moving to the relevant X^0 position, either at S-Structure or LF. Affix-hopping, on the
other hand, is by definition solely operant at S-structure, so any information required by affix-hopping must be available at S-Structure. What is to be noted is that in VoiceP-fronted contexts, main verbs, even when they are fronted, are still able to support bound affixes associated with higher inflectional positions:

(7)  a. Mary must have fixed Bill's car.
    b. Mary must fix Bill's car.
    c. Bill said Mary promised to fix his car, and [fix his car] she must.

(8)  a. Mary has been fixing Bill's car.
    b. Mary has fixed Bill's car.
    c. Bill said Mary promised to fix his car, and [fixed his car] she has.

(9)  a. Bill's car was being fixed by Mary.
    b. Mary was fixing Bill's car.
    c. Bill said Mary would be fixing his car, and [fixing his car] she was.

(10) a.  
    b. Bill's car was fixed by Mary.
    c. Bill said his car was fixed by Mary, and [fixed by Mary] it was.

In each of the a. and b. sentences in (7-10), the participial form of the second verb is determined by the first modal or auxiliary, regardless of whether the second verb is an auxiliary or a main verb. The most probable explanation for how one verb can determine the form of another is through selection: the higher verb specifies that its complement must be in a specific morphological form. To meet this selectional requirement, auxiliary verbs must move at S-structure to the head of the complement of a higher verb. However, main verbs are unable to move at S-structure, so they must meet the selectional requirements of the higher verb through alternate means. Although affix-hopping could conceivably be used to move the bound participial affixes of the complement form down to the main verb in each of the b. sentences, the account becomes considerably more complicated in the contexts in which the main verb is fronted. Affix-hopping is typically conceived of as a downward movement rule that applies at S-structure after any overt verb movement; for an affix to pass to a fronted verb, it would presumably be required to first move down to ProgP, then change directions and move up to the front of the sentence in order to reach the main verb in its surface position. The downward movement property of affix-hopping already makes it dubitable, but in order to explain affixation in VoiceP-fronting it may even have to be allowed to change directions mid-derivation.
In contrast, the alternative account of affixation with main verbs in which main verbs move to the appropriate inflectional positions at LF to 'check' the features generated in those positions does not have these problems (Chomsky, 1992). Since fronted phrases can be assumed to be 'reconstructed' to their original positions at LF, the LF movement account of main verbs will allow verb movement to proceed unimpeded through the necessary positions:

(11) ...and fixed it she had

a. S-structure

```
TP
  VoicePj
    Voice' she
      +Act
        VP had
          V' fixed
            it
              PerfP
                Perf
                  t_i
                      ProgP
                        Prog'
                          -Prog
                            t_j
```

b. LF

```
TP
  she
    T
      had
        ...\n          PerfP
            Perf
              t_i
                  ProgP
                    Prog'
                      fixed_k
                        VoiceP
                          Voice'
                            t_k
                                VP
                                  V' fixed
                                    it
                                      t_k
```
The only complication that VoiceP-fronting presents for the LF account of affixation is why, if main verbs are able to move at LF, *do* is mandatory in the absence of a higher auxiliary (12), yet ungrammatical if another auxiliary is present (13):

(12) a. *Bill said Mary promised to fix the car, and [fixed the car] she.

   b. LF: Bill said Mary promised to fix the car, and [\(\mathbb{t} s\)he fixed]\[\text{PerfP} t_1 \text{[ProgP} t_1 \text{[VoiceP} t_1 \text{[VP} t_1 \text{the car]}]]\]

   c. Bill said Mary promised to fix the car, and [fix the car] she did.

(13) a. *Bill said Mary would be fixing the car, and [fix the car] she was doing.

   b. Bill said Mary would be fixing the car, and [fixing the car] she was.

Explaining the distribution of *do* in VoiceP-fronted contexts and what rule is responsible for the insertion of *do* in any context will be the topic of the next section.

2. A Generalized Account of Auxiliary *Do*

   The appearance of auxiliary *do* is treated in three main ways in the literature. In Chomsky (1957) there was a do-transformation:

(14) do-Transformation  (Chomsky, 1957 (40))

   \#Af --> \#do+Af

In words, this rule inserts a *do* in any context in which auxiliary movement and affix-hopping fail to provide a host for a bound affix. Thus, *do* can be said to ‘support’ the bound affix. This analysis of ‘*do*-support’ was the standard for quite some time, and has been re-adopted into the contemporary theory by many people (Chomsky, 1989; Ouhalla, 1990; Rizzi, 1990; etc.).3

3 An alternative to *do*-insertion was *do*-deletion, in which *do* is always generated in D-Structure, and then later deleted if not needed. This analysis has been attributed to oral presentations by Klima (1966) (Stockwell et. al., 1973); variations on Klima’s proposal can be found throughout the 1970s (e.g., Emonds, 1976; Akmajian, Steele and Wasow, 1979). Do-deletion was eventually abandoned when it became clear that syntactic rules should not obligatorily over-generate lexical material that must later be deleted. For arguments against *do*-deletion, see Lasnik (1981).
Pollock (1989) explains the presence of do in certain sentences in an entirely different manner. According to Pollock, there are actually three types of do, in addition to the ordinary lexical do meaning approximately 'accomplish'. Two of these do's are 'bridge' auxiliaries, used to link the tense operator generated in T^0 with the event variable of the verb. Due to the prohibition on vacuous quantification, the tense operator must bind something, but main verbs are unable to move beyond their base-generated positions, so there is no way for the tense operator to reach them directly. Consequently, a meaningless do is inserted in Agr^0. This do copies the θ-grid of the verb, and it is this θ-copying property which allows the gap between the operator in T^0 and the verb in V^0 to be bridged. In many cases, bridge do is null:

(15) Mary [TP o_ θi [AgrP t_i [VP fixed Bill's car]]]
    (do) _ _ _ _
    θ-bridge

(The presence of null do does not block affix-hopping because Pollock assumes (p. 405) that the presence of any intervening morphology, lexical or null, never interferes with affix-hopping). However, if NegP is present, bridge do must be realized lexically so as to L-mark NegP (an inherent Barrier) and make it transparent for movement:

(16) Mary [TP did θi [NegP not [AgrP t_i [VP fix Bill's car]]]]
    _ _ _ _
    θ-bridge

The reason why neither null bridge do nor lexical bridge do may occur with auxiliaries is that the auxiliaries lack a defined θ-grid, making it impossible for the do to serve as a bridge between them and the tense operator. As a result, overt movement by the auxiliaries to T^0 is obligatory.

Pollock's third special do is that found in negative imperatives. This do seems to be able to assign case to subjects:

(17) Don't you dare!

On the basis of this fact, Pollock proposes that it is a fossilized main verb meaning 'causative', which retains the property English main verbs formerly had of being able to move at S-structure (p. 402-403).

Pollock's account of do-support would probably explain obligatory do in main verb VoiceP-fronted contexts by specifying that bridge do must be overtly realized in VoiceP-fronted contexts so that a Barrier for the move-
ment of VoiceP can be made transparent through L-marking. Although
such an account might suffice for VoiceP-fronting, the entire approach,
with its three different do's and the special theoretical assumptions needed
to choose amongst them, is unwieldy.

A preferable alternative would posit only one auxiliary do, inserted
by a single rule. The do insertion rule would ideally be triggered only by
independently required principles of universal grammar, not modifi-
cations to the theory needed specifically for certain constructions. This do
rule should also circumvent the problems inherent in both the Do-Trans-
formation and the Do-Deletion approaches; it should provide for the
insertion of do without appealing to a specific transformation, and it
should not indiscriminately over-generate do without causing ungram-
maticality.

One way to accomplish all of this is to allow do to be inserted freely
into the syntax, just as all the other auxiliaries and inflectional morphemes
are (Chomsky, 1992; see also Ernst, 1992), but to rule it out on principled
grounds when it is needlessly generated. What makes do differ from the
other auxiliaries is that do is meaningless. As a meaningless element, it is
not associated with any particular feature. The other auxiliaries are
associated with particular functional features, so their presence is required
by feature-checking whenever those features are generated, and ruled out
by feature-checking if the features are not so generated. In contrast, no
particular feature is responsible for requiring the presence of do, so do
cannot be checked in the manner that the other features are checked.
Rather, do may only be checked if it is used to rescue a derivation that
would otherwise crash. The Principle of Economy of Derivation (Chom-
sky, 1989) ensures that if an alternative derivation exists that does not
make use of do, only that shorter alternative will be grammatical. Thus,
do-insertion is a rule of last resort, but this follows necessarily from the fact
that do is devoid of meaning; it does not require special stipulation as such

The task is then to determine what principles are responsible for
requiring do in the contexts in which it is found, and why the derivation
would crash in these contexts if do is not generated. Investigation into
these matters will show that there are two main reasons why do may be
needed: to fulfill the requirements of the ECP or to fulfill the requirements
of feature-checking.

2.1. Do and the ECP

According to the conjunctive version of the ECP, all traces must be
head-governed. In this light, consider the construction in which VoiceP
has been fronted:
The only way such movement will be licit with respect to the ECP is if the trace left behind by the fronted VoiceP is head-governed. As long as an auxiliary is present (and provided that auxiliary is generated in the head of a functional phrase generated above VoiceP, as would be consistent with (6) above), that auxiliary will be able to head-govern the trace.

However, if no auxiliary is present, then the trace will not be head-governed. If the trace is not head-governed, the derivation will crash. The derivation could not be saved by verb movement or trace deletion at LF because the fronted phrase is not an adjunct; its trace must be 0-marked by S-structure (Lasnik and Saito, 1984). As a result, the only possible way a VoiceP can be fronted in the absence of an ordinary auxiliary verb is if the do auxiliary is generated to govern the trace of the fronted phrase. Hence, do is obligatory in VoiceP-fronting contexts containing only a main verb.4

For the same reason, do is also found in other contexts in which the functional complex (IP) of the verb is abbreviated and no auxiliary is present. One example of such contexts is VP-ellipsis, where part of the phrase is missing or ‘deleted’:

(19) a. John will have been writing his thesis for over a year by then, but Mary will not have been e.

b. John will have been writing his thesis for over a year by then, but Mary will not have e.

c. John will have been writing his thesis for over a year by then, and Mary will e too.

---

4 Thus, VoiceP-fronting constitutes an example of a construction in which auxiliary do is obligatory, yet not as ‘support’ for a bound affix or inflectional feature. For this reason, the term ‘do-support’ cannot be used to refer to all instances of auxiliary do.
Despite the wide range of possible 'deletion' sites, the process is not unconstrained; as an empty category, the 'deleted' phrase must obey the ECP. This requires that it be head-governed. Thus, some lexically realized X0 must precede the 'deleted' phrase (cf. Lobeck, 1987, 1992):

(20) a. *John will have been writing his thesis for over a year by then, and Mary e too.

b. John will have been writing his thesis for over a year by then, and Mary will e too.

If no auxiliaries are present, do must be inserted to govern this empty category:

(21) a. *John finished his thesis and Mary e too.

b. John finished his thesis and Mary did e too.

2.2. Do and Feature-Checking

Not all instances of do insertion can be explained by the ECP in this manner, however. For instance, ordinary negative sentences involving main verbs do not contain XP-movement traces needing head-government, yet do is still required:

(22) a. *Mary not fixed John's car.

b. Mary did not fix John's car.

Since it is unlikely that the ECP is responsible for triggering the use of do in these contexts, one possibility is that this do is somehow needed to fulfill feature-checking; i.e., it is inserted to allow the morphological realization and checking of some feature when alternative means of checking that feature are not available. One potential reason why a feature might not be capable of being checked in the ordinary manner is if X0-movement to the position in which the feature is generated is somehow blocked.

Before this can be used to explain the presence of do in sentences like (22), however, the exact mechanism which causes the blocking must be determined. Blocking in these instances cannot be related to the fact that main verbs are unable to move at S-structure, since the LF-movement of main verbs is sufficient to check all features in comparable (non-negation) contexts:

(23) a. [TP Mary (+Past) [NegP ø [VP fixed the car]]]

b. *[TP Mary (+Past) [NegP not [VP fixed the car]]]
Nor can the blocking be explained by the presence of special functional categories such as negation, since negation does not interfere with the movement of other heads such as auxiliaries, which are arguably generated below *not* but are able to move past *not* if $T^0$ is not otherwise filled:\(^5\)

(24) a. Mary could not have been fixing the car.
    b. Mary has\_i not $t_i$ been fixing the car.
    c. Mary was\_i not $t_i$ $t_i$ fixing the car.

Whatever rule results in the need for *do* in these contexts singles out main verbs for special treatment and is independent of the constraint responsible for delaying the movement of main verbs until LF.\(^6\)

In order to determine what this constraint on main verbs may be, all contexts in which main verb movement is specifically blocked must be taken into account. That is, all contexts need to be identified in which *do* is needed with main verbs but not with auxiliary verbs. Such contexts include negation (25), fronted temporal adverbs (26), yes/no questions (27), adjunct wh-questions (28) and object wh-questions (29):

\(^5\) Ouhalla (1990, 1991) addresses this issue by positing that *not* is the head of NegP and that NegP is generated immediately above the VP, below the positions in which the auxiliaries are generated. Note, however, that such an account will predict the wrong order when more than one auxiliary is used:

(i) #Mary could have been [NegP not [VP fixing the car]].

*Not* in this sentence can only be interpreted as constituent negation. Sentential *not* must be placed before all but the first auxiliary, a position which is not predicted in Ouhalla’s analysis. For an in-depth discussion on the position of NegP in English, see Mitchell (forthcoming).

\(^6\) Several proposals have been made that do link the blocking of just main verbs by negation to the fact that main verbs do not move at $S$-structure. According to Pesetsky (1989), Neg$^0$ is left empty at $S$-structure, but it is filled at LF. Alternatively, it is the operator property of negation which makes NegP opaque for affix-hopping at LF (Rizzi, 1990). Both of these accounts require additional machinery that is not needed in the proposal presented below. For additional arguments that the inability of main verbs to pass *not* is not related to their delayed movement, see Johnson (1992).
(25) a. *[TP Mary (+Past) [NegP not [VP fixed the car]]]
   b. [TP Mary did [NegP not [VP fix the car]]]
   c. [TP Mary hasi [NegP not [PerfP t_i [VP fixed the car]]]]
   d. *[TP Mary did [NegP not [PerfP have [VP fixed the car]]]]

(26) a. *[CP Seldom (C^0) [TP Mary (+Past) [VP fixes her own car]]]
   b. [CP Seldom doesi [TP Mary t_i [VP fix her own car]]]
   c. [CP Seldom hasi [TP Mary t_i [PerfP t_i [VP fixed her own car]]]]
   d. *[CP Seldom didi [TP Mary t_i [PerfP have [VP fixed her own car]]]]

(27) a. *[CP (+q) [TP Mary (+Past) [VP fixed John’s car?]]]
   b. [CP Didi [TP Mary t_i [VP fix John’s car?]]]
   c. [CP Hasi [TP Mary t_i [PerfP t_i [VP fixed John’s car?]]]]
   d. *[CP Didi [TP Mary t_i [PerfP have [VP fixed John’s car?]]]]

(28) a. *[CP Why (+wh) [TP Mary (+Past) [VP fixed John’s car?]]]
   b. [CP Why didi [TP Mary t_i [VP fix John’s car?]]]
   c. [CP Why hasi [TP Mary t_i [PerfP t_i [VP fixed John’s car?]]]]
   d. *[CP Why didi [TP Mary t_i [PerfP have [VP fixed John’s car?]]]]

(29) a. *[CP Whose car (+wh)[TP Mary (+Past) [VP fixed?]]]
   b. [CP Whose car didi [TP Mary t_i [VP fix?]]]
   c. [CP Whose car hasi [TP Mary t_i [PerfP t_i [VP fixed?]]]]
   d. *[CP Whose car didi [TP Mary t_i [PerfP have [VP fixed?]]]]

These contexts need to be compared with those in which there is only a main verb and do is not needed. With the exception of Negation, no functional category in the IP complex triggers the use of do with main verbs:

(30) a. Mary fixed John’s car.
    b. #Mary did fix John’s car. 7

(31) a. John’s car was fixed.
    b. *John’s car was done fix.

(32) a. Mary is fixing John’s car.
    b. *Mary is doing fix John’s car.

7 Do is only grammatical in this sentence if the affirmative counterpart of negation, emphatic [+stress], is present.
(33) a. Mary has fixed John's car.
    b. *Mary has done fix John's car.

(34) a. Mary must fix John's car.
    b. *Mary must do fix John's car.

Nor is *do needed in subject wh-questions:

(35) a. Who fixed John's car?
    b. *Who did fix John's car?

What all the 'do-contexts' seem to have in common, as opposed to the non-
do-contexts, is that they involve functional positions whose specifiers do
not contain a subject or its trace.\(^8\)

The specifier of NegP is arguably an A'-position, so it could never be
occupied by a subject. Rizzi (1990) suggests that negation must involve an
A'-position, because, as Ross (1983) shows, negation interferes with A'-
movement (36a) but not A-movement (36b) or X\(^0\)-movement (36c):

(36) a. *Bill is here, as they don't know. \hspace{1cm} (Rizzi, 1990, ch. 1 (37b))
    b. Bill is here, which they don't know. \hspace{1cm} (Rizzi, 1990, ch. 1 (37a))
    c. They have\(\bar{e}\) not \(\bar{t}\) left. \hspace{1cm} (Rizzi, 1990, ch. 1 (62b))

This, along with the need for *do in negative main verb sentences, led Rizzi
to suggest that the specifier of NegP contains a negative operator (and
possibly the lexical element not as well). The Neg Criterion (Haegeman
and Zanuttini, 1991) formalizes the need for a negative operator in
specNegP:

(37) The Neg Criterion: \hspace{1cm} (Haegeman and Zanuttini, 1991)
    a. Each Neg X\(^0\) must be in a Spec-Head relation with a Negative
       operator;
    b. Each Negative operator must be in a Spec-Head relation with a
       Neg X\(^0\).

---

\(^8\) Deb Yeager (p.c.) points out that all of the intermediate functional
positions within IP must be potential subject positions, since a quantifier
may only be stranded in a position through which the subject has moved,
following Sportiche's (1988) analysis.

(i) a. The children must have been being all bathed and fed.
    b. The children must have been all being bathed and fed.
    c. The children must have all been being bathed and fed.
    d. The children must all have been being bathed and fed.
In sum, regardless of the base-generated location of *not*, the Neg Criterion requires that there must be a negative operator in the specifier of NegP in negative clauses, so specNegP is not available for the subject to move through in these clauses.

As for the CP *do*-contexts, a subject never appears in the specifier of CP in any of these sentences. With fronted adverbs, the adverb itself occupies the specifier of CP, or, alternatively, the adverb is adjoined to CP and the specifier of CP remains unfilled. The specifier of CP is empty in yes/no questions. The Wh-Criterion ensures that the specifier of CP must be occupied by the wh-phrase in the adjunct and object wh-questions:

(38) The Wh-Criterion: (Rizzi, 1991 (6))
   a. A Wh-Operator must be in a Spec-head configuration with an 
      \( X^0_{[\Phi WH]} \).
   b. An \( X^0_{[\Phi WH]} \) must be in a Spec-head configuration with a Wh- 
      Operator.

The presence of a wh-phrase in the specifier of CP would block any movement by the subject to that position.

Thus, the original descriptive generalization is correct: *do* is required if there is a functional position in the sentence whose specifier cannot be occupied by the subject. Such a requirement could be the result of the operation of a constraint such as the following:

(39) Main Verb Licensing:
   Main verbs are only licensed in positions whose specifiers contain 
   a subject.

If the generation of a feature in an \( X^0 \)-position required checking via verb movement, but the main verb were blocked from occupying that position because of (39), then *do* insertion would be the only way to save the derivation.

Before (39) can be adopted, however, it needs to be refined and formalized; theoretical motivation for such a rule needs to be provided. The key clue in the search for the theoretical basis for (39) is that auxiliary verbs are not affected by the rule. The main difference between auxiliary verbs and main verbs has to do with \( \theta \)-theory, so the explanation for the differences in movement possibilities may lie in \( \theta \)-theory. Main verbs are \( \theta \)-related (in the sense of Chomsky, 1989), but auxiliary verbs are not. Subjects are likewise \( \theta \)-related. The constraint in (39) could be alternatively formulated in the following manner: \( \theta \)-related verbs are not able to move into or through phrases unless a \( \theta \)-related NP moves with them. Stated this way, (39) is reminiscent of the Projection Principle.
According to the Projection Principle, all θ-roles must be assigned at every level of the projection:

(40) The Projection Principle: (Chomsky, 1981, 2.1 (38))
The θ-Criterion holds at every level.

(41) The θ-Criterion: (Chomsky, 1981, 2.2 (4))
Each argument bears one and only one θ-role, and each θ-role is assigned to one and only one argument.

When it was originally proposed, the Projection Principle was assumed to refer to D-structure, S-structure and LF. However, recent analyses have abandoned D-structure in favor of a theory in which structure is projected upwards one phrase at a time, and movement occurs as soon as it is possible (Chomsky, 1992). In such a theory, each phrase represents a separate level of derivation. Consequently, if the Projection Principle is still operant, it must require that the θ-Criterion be satisfied at every one of the levels in the derivation, including all of those brought about by the projection of the functional phrases.

To provide for this, the θ-Criterion must obviously allow for some degree of non-local θ-assignment through movement chains, since many verbs assign more than one θ-role, yet there is only one position in which a θ-role may be assigned per phrase. Otherwise, a multiple θ-role assigning verb would not be able to discharge all of its θ-roles at any level of the derivation and thus would never be able to satisfy the θ-Criterion.

What seems to be happening in English is that the Projection Principle is strengthened by an additional licensing condition on main verbs. Not only must the θ-Criterion be satisfied at every level of the derivation, but some aspect of the manner in which the θ-Criterion has been satisfied must be overtly realized at every level. This realization may take the form of direct, rather than chain, θ-role assignment. Alternatively, the link between the potential θ-receiver and the potential θ-assigner may receive concrete morphological realization through spec-head agreement. In sum, there is a Super-Projection Principle:9

---

9 Although derived from a universal principle, the Super-Projection Principle is actually parametric. It does not, for instance, apply in regular V2 languages such as Swedish or German, as can be seen from the fact that main verbs, although arguably base-generated below NegP, are able to move past Negation when they move to C0 in V2 contexts:

(i) att hon inte köpte boken. (Swedish)
that she not bought the book
'that she didn’t buy the book'
(42) The Super-Projection Principle:
A $\theta$-related verb must be linked to a potential $\theta$-argument at every
level. This linking may take the form of:
(i)  direct $\theta$-role assignment, or
(ii)  morphological spec-head agreement.

Not only is the Super-Projection Principle motivated theoretically, but the
adoption of its use will allow a tremendous simplification of the grammar;
if the Super-Projection Principle is adopted, then the need for *do* in all the
contexts in which it occurs can be explained with just one rule, rather than
requiring that separate stipulations or theoretical modifications be made
for each such *do*-context.

The Super-Projection Principle allows an immediate solution to the
paradox posed by the inconsistencies of the ordering and blocking proper-
ties of negation (Mitchell, forthcoming). The problem is as follows: The
ordering of *not* requires that NegP be generated below TP, yet above the
other auxiliaries. This is because, regardless of the other inflectional
elements present, *not* always appears in the second position of the verbal
complex:

(43) a.  The car was not fixed.
    b.  The car was not being fixed.
    c.  The car has not been being fixed.
    d.  The car will not have been being fixed (for long by 4:30).

If *not* were a head, it would be expected to block the $X^0$-movement of the
auxiliaries from that position.\(^{10}\) Since *not* does not block the auxiliaries, it

(ii)  Hon köpte inte tjligt boken.
    She bought not the book.
    ‘She didn’t buy the book.’

Likewise, main verbs are also able to appear in $C^0$ in adjunct questions,
etc.:

(iii)  När köpte hon boken?
    When bought she the book
    ‘When did she buy the book?’

It is not clear at this time why English should choose one value for this
parameter and Swedish and German the other; such matters will hope-
fully be settled by future research.

\(^{10}\) Pollock (1989, p. 421) suggests that an extension of Relativized
Minimality might be able to take care of the non-blocking of the auxiliaries
cannot be in Neg\textsuperscript{0}; the only other possibility is that it is in the specifier of NegP. However, as a specifier it would not be expected to be able to block main verbs. Since the X\textsuperscript{0}-movement of main verbs is blocked in the presence of not, ordinary assumptions would make it an X\textsuperscript{0}. But if it were an X\textsuperscript{0} in that position, it would be expected to block the auxiliaries. Thus, there is a paradox unless some alternative explanation can be found for how the X\textsuperscript{0}-movement of main verbs could be blocked in negation contexts by something other than an X\textsuperscript{0}. The Super-Projection Principle provides just such an explanation. Main verbs cannot move to T\textsuperscript{0} in the presence of not because to do so they would have to move through Neg\textsuperscript{0}, and they cannot be licensed in that position, due to the fact that the specifier of NegP contains the Negative Operator (realized by the lexical item not), which is not a potential \(\theta\)-argument of the verb.

However, the use of do in negation is not the only problem that the Super-Projection Principle is capable of solving. In order to explain why do is needed in the adverb fronting and question contexts described above, it has usually been assumed that there must be a blanket prohibition on the main verb appearing in C\textsuperscript{0}. Although such a prohibition is crucial for analyses of word order and the distribution of do, it has, to date, never received a satisfactory theoretical explanation.\textsuperscript{11} However, the same Super-Projection Principle that explains the appearance of do in negation will also automatically take care of the inversion contexts as well. Namely, main verbs are not able to move to C\textsuperscript{0} in these contexts because

\textsuperscript{11} The usual analysis is that the filling of C\textsuperscript{0} in these contexts is achieved through the rule of I-to-C movement. Main verbs are naturally excluded from such a rule because they are not I elements. However, if main verbs are able to move to certain I positions by LF, more must be said as to why C\textsuperscript{0} cannot be filled with a main verb, since it could conceivably do so at LF and then there would be no need for do. Either C\textsuperscript{0} must be unique among the functional categories in being required to be filled at S-structure, or some other constraint must be found to keep main verbs out of C\textsuperscript{0}. There is one possible reason why C\textsuperscript{0} might need to be filled lexically by S-structure: to make any Barrier for movement out of IP transparent. However, such an account leaves the non-occurrence of do in subject questions unexplained.
they would not be licensed in that position, since the specifier of CP does not contain a potential θ-argument.

Furthermore, the adoption of the Super-Projection Principle will allow a return to the intuitive analysis of question-formation in which all questions, including subject wh-questions, are assumed to be formed via the same movement processes. In Chomsky (1957) there were two rules for question formation, $T_q$ and $T_w$:

(44) $T_q$ (Chomsky, 1957, Appx. II 17.)

Structural Analysis: NP - [T/Agr] - V...
   NP - [T/Agr]+[Modal] - ...
   NP - [T/Agr]+have - ...
   NP - [T/Agr]+be -...

Structural Change: $X_1$ - $X_2$ - $X_3$ -> $X_2$ - $X_1$ - $X_3$

(45) $T_w$ (Chomsky, 1957, Appx. II 19.)

a. $T_{w1}$: [Fronts the NP to be questioned]

Structural Analysis: X - NP - Y (X or Y may be null)
Structural Change: $X_1$ - $X_2$ - $X_3$ -> $X_2$ - $X_1$ - $X_3$

b. $T_{w2}$: [Changes the fronted NP into a wh-word]

Structural Analysis: NP - X
Structural Change: $X_1$ - $X_2$ - wh+$X_1$ - $X_2$
   where wh+animate noun -> who
   wh+inanimate noun -> what

The first rule was used in all questions, both yes/no and wh; its effect was to invert the order of the subject and the first verbal element. Wh-questions additionally used the second transformation to ensure that the element to be questioned would be fronted and changed into a wh-word. The only difference between subject wh-questions and all other questions was that because the wh-phrase in these questions was a subject, fronting of the wh-phrase effectively reversed the effects of inversion brought about by the prior application of $T_q$. The method of attaching affixes to the main verb was the Auxiliary Transformation, later known as Affix-Hopping:
(46) Auxiliary Transformation: (Chomsky, 1957, Appx. II 20.)

Structural Analysis: X - Af - v - Y
(where Af is any [T/Agr] or is en or ing; v is any [Modal] or V, or have or be)

Structural Change: \( X_1 \times X_2 \times X_3 \times X_4 \rightarrow X_1 \times X_3 \times X_2^\# \times X_4 \)

Affix-hopping was a relatively late rule; it required adjacency to hold between the elements to be linked by the application of the rule. If adjacency did not hold, and an affix was left unattached, then do had to be inserted as support for the affix:

(47) do-Transformation: (Chomsky, 1957 (40))

\[ #Af \rightarrow #do+Af \]

Ordinarily, any main verb context in which inversion had applied would automatically require the insertion of do, since the subject would block adjacency between the tense affix and the main verb:

(48) a. Underlying:

John - [T/Agr] - eat+an+apple (NP - [T/Agr] - V...)

(Chomsky, 1957 (61))

b. T/Agr Introduction and Inversion (Tq):

past+John+eat - an+apple

(Chomsky, 1957 (67))

c. Question phrase fronting (T\_w1):

an+apple - past+John+eat

(Chomsky, 1957 (68))

d. Wh-phrase replacement (T\_w2):

what - past+John+eat

(Chomsky, 1957 (69))

e. Affix-hopping (Auxiliary transformation):

[Cannot apply: the Affix past is not immediately followed by a verb.]

f. Do-insertion (do-transformation):

what did John eat

(Chomsky, 1957 (58i))

However, since the effects of inversion were undone in subject wh-questions, the tense element and the verb were once again adjacent and Affix-Hopping could apply freely. Consequently, no do was called for in these questions:
(49) a. Underlying:
   John - [T/Agr] - eat+an+apple (NP - [T/Agr] - V...)
   (Chomsky, 1957 (61))

   b. T/Agr Introduction and Inversion (T_q):
      past - John - eat+an+apple  (Chomsky, 1957 (63))

   c. Question phrase fronting (T_{w1}):
      John - past - eat+an+apple  (Chomsky, 1957 (65))

   d. Wh-phrase replacement (T_{w2}):
      who - past - eat+an+apple  (Chomsky, 1957 (66))

   e. Affix-hopping (Auxiliary transformation):
      who ate an apple  (Chomsky, 1957 (58ii))

   f. Do-insertion (do-transformation):
      [Not necessary: there are no remaining unattached affixes.]

Although this account was quite successful in predicting the occurrence of do in all types of questions, the adoption of trace theory forced its abandonment, since the trace of the fronted subject would intervene between the tense affix and the verb in subject wh-questions, making the insertion of do once again obligatory.

This left the question of why there is no do in subject wh-questions without a ready explanation. As mentioned above, in order to predict that do will be obligatory in the obvious inversion contexts, it was assumed that C^0 is entirely off limits to main verbs. Consequently, if subject wh-questions involve 'I-to-C' movement as do other questions, do is expected to be obligatory in main verb subject wh-questions as well:

(50) a. *[CP Whose carp (wh) [TP Mary (Past) [VP fixed t_i?]]]
   b. [CP Whose carp did; [TP Mary t_j [VP fix t_i?]]]

(51) a. [CP Who_i (wh) [TP t_i (Past) [VP fixed John's carp?]]]
   b. *[CP Who_i did; [TP t_i [VP fix John's carp?]]]

The fact that do does not appear in such contexts is then problematic. The usual interpretation of these facts is that 'I-to-C' movement is somehow not obligatory in subject wh-questions. Various proposals have been made to this effect, including the non-projection of CP in matrix clauses and questions, along with the special ability of a subject wh-phrase to receive case in specIP (Pesetsky, 1989), and filling C^0 in subject wh-questions by proxy through agreement relationships (Rizzi, 1991). Although these proposals are all capable of explaining the facts, they do so in a way that
forces a fundamental structural distinction to be made between subject wh-questions and all other questions. Such a distinction is counter-intuitive, since it is not obvious what yes/no questions have in common with all types of non-subject wh-questions as opposed to subject wh-questions.

On the other hand, if the Super-Projection Principle is used to explain the need for *do* in inversion contexts, then it no longer has to be assumed that main verbs are absolutely prohibited from occupying $C^0$. Consequently, it can be posited that $C^0$ must be filled through overt movement of an $X^0$ in all questions, including subject wh-questions, provided an explanation is supplied for the lack of *do* in subject wh-questions. According to the Super-Projection Principle, a main verb will only be licensed in $C^0$ if the specifier of the phrase is a potential theta-argument of the verb or linked to the verb through morphological spec-head agreement. The specifier of CP is an A'-position, so the first option can never be used to license main verbs in CP. However, the second option could conceivably be available in limited circumstances. Namely, there is one spec-head agreement relation in English which receives morphological realization: the one checked in Agr$\gamma$P. CP is above Agr$\gamma$P, so if a verb were to arrive in $C^0$ via movement, it will continue to bear the agreement morphology that was checked in Agr$\gamma$P. This agreement morphology can serve to link the verb to the element in the specifier position, provided that element matches the features expressed by the agreement morphology. The only instance in which these conditions are met is when the element in specCP is the subject of the sentence. As a result, main verbs are able to occupy $C^0$ in subject wh-questions when they move at LF to satisfy feature-checking, so no *do* is called for.

Thus, the Super-Projection Principle provides a means of regaining the advantages of the simple and elegant account of question formation found in Chomsky (1957). All questions involve $X^0$-movement to $C^0$. All wh-questions involve wh-movement to specCP. The distribution of *do* in questions (as well as non-question inversion contexts) is once again taken care of by an independent rule derived from a universal principle that applies generally throughout the language, not just in CP. Under the Super-Projection Principle, all instances of main verb *do*-support in its various contexts receive explanation through one unique rule, rather than different rules being required to affect the same set of elements in each individual context.

It would be even more advantageous if the Super-Projection Principle could also be extended to explain the need for *do* in the VoiceP-fronting contexts discussed above. Unfortunately, this is not possible. In order to predict the appearance of *do* in sentences in which VoiceP is fronted, it would have to be shown that fronting VoiceP somehow
interrupts the subject chain. When anaphor interpretation is examined in VoiceP-fronted contexts, it is found that the set of possible antecedents for a fronted anaphor is more limited in these contexts than in other types of fronting processes:

(52) a. [Which pictures of himself$_{i/j}$]$_{k}$ did John$_{i}$ think Bill$_{j}$ saw t$_{k}$?  
(Huang, 1993 (16a))

b. [Criticize himself$_{i/j}$]$_{k}$, John$_{i}$ thought Bill$_{j}$ would not t$_{k}$.
(Huang, 1993 (16b))

Although this might seem indicative of a potential problem in the reconstruction of the subject chain, Huang (1993) provides a simpler analysis. According to Huang, the possible antecedents for the fronted anaphor are limited because the fronted VoiceP itself constitutes a Complete Functional Complex, in the sense of Chomsky (1986). Huang argues that VoiceP contains a trace of the subject, and shows that, if so, a fronted anaphor must be bound within VoiceP and will consequently not be able to be co-indexed with any outside elements. Thus, the anaphoric evidence is not indicative of a subject chain problem at all; on the contrary, it suggests that the subject chain must be intact, at least for purposes of anaphoric interpretation.

Furthermore, if the appearance of do in VoiceP-fronting were to be explained by the Super-Projection Principle, the evidence from verbal affixation shows that the supposed problem with the subject or its movement chain would have to occur above the level of the fronted phrase, rather than be triggered directly at the reconstruction interface. As mentioned above, a fronted main verb may bear affixes that can only be checked by LF movement to phrases above VoiceP:

(53) a. John thought Mary had fixed the car, and [VoiceP [VP fixed the car]]$_{i}$ she had t$_{i}$.

b. John promised Mary will fix the car, and [VoiceP [VP fix the car]]$_{i}$ she will t$_{i}$.

In order for the main verb to bear these affixes, it must be able to move to the appropriate phrase at LF. To do this, it would have to be licensed by the Super-Projection Principle in the appropriate phrase, and thus, it would have to have access to the subject in each of the functional phrases whose affix it may bear. If so, the subject chain would have to be intact, at least as far as these phrases; i.e., the subject chain would have to be intact above the position at which reconstruction occurs. This would leave no motivation for a subsequent disruption of the subject chain, since it is not
obvious how such a disruption could suddenly appear in a higher, unaffected position. In the end, it seems far less stipulative to return to the ECP account formulated above for explaining why *do* is necessary in these contexts.

Although this would require positing that the same rule, *Do-Insertion*, is triggered by two very different mechanisms, this is not necessarily a reason for rejecting the approach. As it turns out, there is yet a third phenomenon which sometimes results in the need for the generation of *do*. However, as above, the appearance of *do* in these contexts can be explained by one and the same rule used for all other instances of auxiliary *do*, in interaction with the principles of Universal Grammar.

### 2.3. *Do* and Imperatives

A particularly vexing fact about negation (and affirmation) in imperatives is that all verbs require *do* in negative imperative contexts, not just main verbs:

(54) a. Don’t be greedy!
    b. Don’t be fixing the car when Mary gets here!
    c. Don’t have finished fixing the car by the time Mary gets here!

No phrase is fronted in imperatives, so an ECP-based explanation for the obligatory *do* is not a viable option. Nor is the Super-Projection Principle a likely candidate, since all verbs are affected, not just the *θ*-related verbs.

It is precisely this fact, that all verbs require *do* in imperatives, which has proved most problematic for previous accounts of *do*, but will lead to an eventual explanation in the current proposal. Recall that in order to explain the appearance of *do* with the aspectual auxiliaries in imperatives, Pollock (1989) was forced to posit that this imperative *do* is a fossilized main verb, not an auxiliary *do*. For Ouhallá (1990), the fact that *do* is required with the auxiliaries is not at all expected, since negation in his analysis is generated below all of the auxiliaries, a position from which it should not be able to affect the movement of the auxiliaries. Thus, under Ouhallá’s account, negation in imperatives would have to be explained by the positing of a second NegP, generated above the auxiliaries.

Rather than posit that the structure of imperatives is any different from that of ordinary indicative phrases, a more reasonable approach is to return to the traditional analysis of imperatives dating back to Chomsky (1955) and Klíma (1964), which holds that imperatives contain a modal which does not receive phonological expression at S-Structure. Such accounts were standard through the 1970s (e.g. Emonds, 1976; Hornstein,
1977), but were eventually given up because they posited that an ordinary modal is generated in imperative sentences which is obligatorily deleted by S-Structure. The facts in (54) remain to be explained, however. The simplest way to do this is to posit that there is indeed a modal generated in imperative sentences, but that this modal is completely devoid of phonological content. Like other modals, it would be generated in an X⁰-position above the auxiliaries, so, in accordance with the Head Movement Constraint, it would block further movement of those auxiliaries. At the same time, being phonologically null, it would not be able to serve as morphological support for any higher features that might need to be checked. As a result, do would have to be inserted to save the derivation if there were any higher features present, regardless of the 0-properties of the other verbal elements present in the phrase. Thus, such an assumption about the make-up of the imperative morpheme allows an automatic explanation for the obligatory appearance of do in all negative imperatives.

12 Lasnik (1981), in a manner reminiscent of Lees (1964) and Stockwell et. al. (1973), also posited that imperatives contain a null element, but in Lasnik's account, that element is a null (bound) affix rather than a null modal. As a null affix, the imperative element would not be expected to interfere with the movement of the auxiliaries, although this is precisely what seems to be the case:

(i) *Have'n't ti finished fixing the car by the time Mary gets here!

In Lasnik's account it is presumably the null imperative affix that requires the insertion of do in (i). However, if so, it is not explained why auxiliaries are blocked from providing that support in negative imperative clauses, since negation does not block auxiliary movement in ordinary negative indicative clauses. If, on the other hand, the imperative element is analyzed as being a null modal rather than a null affix, these problems receive a ready solution.

13 In order to complete the present account, the feature in need of support in negative imperatives must be identified. In Mitchell (forthcoming), I argue that this stranded feature is the negative feature generated in Neg⁰ in accordance with the Neg Criterion rather than a feature generated higher in the phrase structure (e.g., Tense). I demonstrate that this hypothesis will explain the lack of Tense and Agreement morphology in imperatives, as well as the differences in subject word order between ordinary and negative imperatives:

(i) (You) listen to me!
(ii) Don't (you) listen to her!
3. Conclusions

A re-examination of Akmajian, Steele and Wasow's (1979) V₁-fronting discussion has provided arguments from English for the syntactic existence of a phrase headed by the passive auxiliary, VoiceP. Furthermore, ASW's facts also confirm that auxiliaries alone are able to move at S-structure in English, but that main verbs must wait until LF to do so, as well as provide additional evidence for the hierarchical organization of the functional elements within the IP complex.

Not addressed by ASW is the need for do in VoiceP-fronting contexts which contain only a main verb. This issue has been taken up as part of a general question of what is responsible for the appearance of auxiliary do in any context in which it occurs. A general rule has been posited for the insertion of do which is neither construction-specific nor verb-specific. An additional result of the present study has been the formulation of the Super-Projection Principle, which not only explains in a principled manner the distribution of do in the remaining main verb contexts, but also allows the elimination of the counter-intuitive distinction between subject wh-questions and all other types of questions. It also solves the seemingly independent paradox inherent in the blocking and ordering facts of negation in English. In sum, it has been shown that all instances of auxiliary do can be explained through the application of the unique rule of do insertion and the interaction of that rule with independently required principles of Universal Grammar, such as the ECP and the Head Movement Constraint, feature-checking, the Projection Principle, the Principle of Economy of Derivation.

References


Ross, J. R. (1983) "Inner Islands," ms., MIT.


Syntactic Analysis of the Light Verb Construction

Takashi Nakajima
Cornell University

0. Introduction

This paper's intent is to explain the general properties of the Light Verb Construction (LVC hereafter) under the theory of the incorporation of \( X^0 \) categories (Baker 1988). I will argue that the structural complexities we see in the LVC arise from two kinds of interaction: one is the categorical ambiguity of Verbal Nouns (VNs, Martin (1975), or \( \theta \)-Transparent NPs in Grimshaw and Mester (1988)), and the other is the incorporation of VNs with the content of \( V \) and \( I \). Current literature treats VNs as constituents with features [+nominal, +verbal] (Kageyama 1982) and as argument taking nouns containing \( \theta \)-roles (Grimshaw & Mester (G&M henceforth) 1988), Sells (1990), Ahn (1990)). I will claim that the categorical status of VNs is \( N \). However, they are denominalized and gain verbal properties by incorporation with either \( V^0 \) or \( I^0 \). VNs take and realize their arguments only when they are verbalized through incorporation. When they are licensed as nouns they act just like concrete nouns. Therefore, the categorical specification of VNs is accomplished in two ways: (i) denominalization which results from moving VNs into \( V^0 \) or \( I^0 \) position (see also Ahn (1990)), or (ii) subcategorization into the complement position of the verb \( suru \) as \( N \). This analysis eliminates the distinction between 'light' and 'heavy' \( suru \), and as a consequence, reduces the redundancy and simplifies the theory. This analysis is 'syntactic' rather than 'lexical' in that it does not rely on the lexical process of Argument Transfer (G&M(1988)), a process which extracts arguments contained in VNs. I will show that LVC related phenomena can be explained within a well-motivated syntactic framework in a systematic fashion. I will also show that although there is no 'light' or 'heavy' \( suru \) distinction in the LVC, auxiliary \( suru \) (like English auxiliary \( do \)), does, however, exist independently, most notably with unaccusative verbs.

1. Light Verb Construction

The Light Verb Construction (LVC) is a sentence construction involving an argument that takes a noun called a Verbal Noun (VN, Martin (1975)) together with the supportive (or 'light') verb \( suru \) (do). \( Suru \) is said to lack semantic content and be skeletal in terms of argument structure. The LVC is exemplified in the following sentences.
   J-NOM bacterium ACC study-do-pft.
   'John studied the bacterium.'

   J-NOM bacterium-GEN-study-ACC do-pft.
   'John studied the bacterium.'

KENKYUU (study) is one of the VNs\(^1\) commonly found in Japanese. The
categorical status of VNs can be determined by the following diagnostic
tests. First, upon negation, concrete nouns take-zya- (called inflection in
traditional Japanese grammar) between nouns and the negation
morpheme -nai-. This is shown in (2) below.

(2) Noun  Negation
         a. hon (book)     hon-zya-nai (book-infl-Neg.)
         b. sakana (fish) sakana-zya-nai (fish-infl-Neg.)
         c. John           John-zya-nai (John-infl-Neg.)

Only words of the category noun take the inflectional form of -zya- in
negation. VNs follow this pattern.

(3) VNs  Negation
       a. KENKYUU (study) KENKYUU-zya-nai
       b. RENSYUU (practice) RENSYUU-zya-nai
       c. KEKKON (marriage) KEKKON-zya-nai

As shown by (3) the negation pattern of VNs is exactly parallel to the
concrete nouns in (2). Another diagnostic test used to figure out the
category of VNs is modification. In Japanese grammar when two or more
nouns are combined they are usually connected by the GEN marker no.
This is shown in (4).

(4) a. John-no-kuruma
       J-GEN-car
        'John's car'

\(^1\) I will follow the convention adopted by G&M (1988) that every VN is
capitalized. VNs are Sino-Japanese words, meaning that they originated
in Chinese and are therefore registered as loan words in the Japanese
lexicon. Japanese verbal compounds, however, act like VNs as we will see
in section 3.1.
b. Tanaka-no-kinoo-koogi
Mr/s. Tanaka-GEN-yesterday-GEN-lecture
(*Mr/s Tanaka’s yesterday’s lecture)

Again, VNs follow the same pattern.

(5) a. sakana-no-KENKYUU
fish-GEN-study
‘study of fish’

b. supiiti-no-RENSYUU
speech-GEN-practice
‘practice of speech’

c. Tanaka san-no- kinoo- no- nidome- no- KEKKON
Mr/s Tanaka-GEN yesterday-GEN second time-GEN marriage
(lit.) the second-time marriage of Tanaka’s yesterday’

The VNs are heads and other nouns modify them. The modification may
be extensive, as in (5c), so long as it is semantically interpretable. These
diagnostic tests show that VNs do in fact behave like concrete nouns, at
least in the categorical sense, and are treated as such. However, VNs
separate themselves from concrete nouns in that they seem to simultane-
ously have the properties of verbs, i.e., they take arguments. These verbal
properties of VNs can be seen when they appear with the light verb suru
(do). Let us consider this with the VN, KENKYUU (study) which first
appeared in (1). Since a VN is categorically a noun, when it is modified by
other nouns the GEN marker no is used, as in John no saikin no KENKYUU.
This is not the nominalization of English type such as Romans’ destruction
of the city/The Romans destroyed the city since we cannot construct a sentence
with KENKYUU alone. This contrast is shown in (6a- b) below.

(6) a. [John-no- saikin-no- KENKYUU]NP
   J-GEN- bacterium-GEN- study
   ‘John’s study of the bacterium’

b. *John-ga saikin-o KENKYUU-ta
   J-NOM bacterium-ACC study-pft
   ‘John studied the bacterium.’

2 See also copula desu attachment and relativization in Sells (1990) for
more evidence that they are nouns.
The NOM and ACC case markers indicate exactly the cases we would expect if KENKYUU assigned case. Then, to form a predicate, suru is needed, as in (1) which is repeated below.

   J-NOM bacterium ACC study-do-pft.
   'John studied the bacterium.'

   J-NOM bacterium-GEN-study-ACC do-pft.
   'John studied the bacterium.'

This shows that VNs require some help from suru for predicate formation. Thus, the nature of the LVC is found in the interaction between VNs and suru. Suru itself is registered as an independent verb in the lexicon. This can be seen in the following sentence in which all the necessary case particles are assigned.

(8) John-ga Figaro-no-yaku-o su-ru
   J-NOM F-GEN-role-ACC do-impft
   'John plays the role of Figaro.'

If we go back to the contrast between (6) and (7), it seems that all the arguments which appear in the sentences in (7) are of the VN KENKYUU, and the verb suru does not project its potential arguments at all. This holds true for at least the Theme argument, since we cannot say *John ga saikin o sita (John did bacterium.), i.e., saikin is not the argument of suru but is the argument of the VN KENKYUU. The problem, however, is that the Theme argument is presumably case marked by suru. This idea led people to think that suru in (7) is 'light' in the sense that it does not actively participate in sentence formation as ordinary verbs do but plays the secondary role of helping VNs realize their arguments on surface syntax. In contrast, when suru appears as an independent V, as in (8), it is 'heavy' in the sense that it can predicate its own arguments.

However, there are some problems which need to be accounted for. First, how does the Theme argument saikin (bacterium) appear external to the projection of the licenser, KENKYUU. Recall that if it were internal to the projection of the VN, it would modify the VN with the GEN marker no as we have seen in (6a). θ-role assignment is thought to be done under strict sisterhood (Chomsky 1981). Clearly, θ-role assignment to a constituent outside the projection of the assigner violates this assumption as G&M (1988) correctly point out. Second, how do we account for the alternation of ACC case assignment. In (7a) ACC case is assigned to saikin
(bacterium), but in (7b) it is assigned to the complex NP \[saikin no KENKYUU\] . This is directly relevant to the role of suru . Third, if VNs are of the category N, they should also be subject to Case Filter. How does the VN KENKYUU avoid Case Filter violation in (7a)? Fourth, what exactly is the interaction between VNs and suru that enables VNs to realize their otherwise sealed arguments in surface syntax. Although VNs behave just like ordinary nouns in isolation, their arguments appear in the surface syntax when they are connected to suru . These are the problems LVC poses.

In what follows I will review G&M (1988) in detail to show their 'lexical' approach and some problems of the analysis, then I will argue for 'syntactic' approach which I believe has several advantages over the lexical approach. (See also Dubinsky (1989), Ahn (1990), Sells (1990) for related discussions.)

1.1. Argument Transfer: The Lexical Approach

Following the traditional insight about the 'lightness' of suru mentioned above, G&M try to capture the interaction between suru and VNs in terms of the pair's lexical relation mediated by the derivation of the [VN + suru] form in the lexicon. Under their treatment VNs are not the argument of the light verb suru. The light verb "subcategorizes and case-marks a direct object NP without assigning it a \( \theta \)-role (G&M (1988) p. 205)." This apparent contradiction between subcategorization and \( \theta \)-role assignment is resolved because VNs are subcategorized by another kind of \( \theta \)-role assignment, Argument Transfer.

According to G&M, the light verb suru is skeletal in terms of its argument structure but is able to assign ACC case. Since it does not have arguments of its own, it does not subcategorize or \( \theta \)-mark any NP in the usual way. The presentation of the argument structure of suru is given in (9) ((12) in G&M).

\[
(9) \quad \text{suru, V: ( ) <ACC>}
\]

This is the opposite property from what VNs are thought to have, in that VNs have arguments but lack case and \( \theta \)-role assigning capacity. In order to syntactically realize their arguments in surface, VNs need to somehow discharge their \( \theta \)-roles. VNs do this by associating themselves with the light verb suru to turn them into "a functional equivalent of a verb" (p. 211). This association is established when VNs 'lend' their arguments to suru, and suru in turn assigns the \( \theta \)-roles and case to NPs. This is the mechanism which allows the arguments of VNs to appear outside of their projection. If some \( \theta \)-roles are not transferred to suru and choose to
remain within the projection of VNs, they are assigned by the VNs since it now has the verbal properties. This absorption of \( \theta \)-roles and the assignment of them to arguments is called Argument Transfer.

Argument Transfer is referred to as a ‘lexical’ process for the following reason. In order to have the correct projection of arguments contained in VNs it is crucial that \( \textit{suru} \) and VNs coordinate in a synchronized fashion; otherwise, the projection will crash. For example, the following projection of the argument structure of \( \textit{suru} \) in (10a) together with the arguments contained in the VN in (10b) is unacceptable since the Theme argument cannot be realized (G&M (1988) p. 213).

(10) a. \( \text{suru: (Agent, Goal) <ACC>} \)

b. KEIKOKU (  )

To ensure the synchronized transfer of arguments between \( \textit{suru} \) and VNs, G&M assume that, as with idioms such as \( \textit{kick the bucket} \), the association between the two is lexical. Thus, "(V)Noun and \( \textit{suru} \) are listed together in a derived lexical entry" (p. 213).

Argument Transfer is thought to be sensitive to the organization of the argument structure of VNs in that when an inner argument is transferred, any argument external to it should also be transferred. Argument Transfer is exemplified in (11). In (11a) the VN KEIKOKU (warn) transfers all the \( \theta \)-roles, whereas in (11b) the same VN transfers only some of the \( \theta \)-roles.

(11) a. John-wa murabito-ni \([\text{ookami-ga kuru-to}]\) no KEIKOKU -o J-Top villager -to wolf-NOM come COMP warn-ACC
   si-ta.
   do-pft
   'John warned the villagers that the wolf is coming.'

   KEIKOKU: (Agent, Goal, Theme)
   suru: (  ) <ACC>
   KEIKOKU ( Theme ) - suru (Agent, Goal) <ACC>


   KEIKOKU: (Agent, Goal, Theme)
   suru: (  ) <ACC>
   KEIKOKU (  ) - suru (Agent, Goal, Theme) <ACC>
In (11a) the VN KEIKOKU has three arguments: Agent, Goal, and Theme. The light verb suru does not have any, but it can assign ACC case. The combination of the two results in the VN KEIKOKU lending two of the arguments, Agent and Goal, to suru, and these arguments are realized on the surface syntax as John and murabito (villagers). Notice that they appear outside of the projection of the VN. In (11b) the VN lends all the arguments to suru, and in addition to John and murabito (villagers) the Theme ookami ga kuru to (that the wolf is coming) is also realized outside of the projection of the VN keikoku. The difference between (11a) and (11b) is that in (11a) the non-discharged θ-role of Theme is realized internal to the projection of the VN (i.e., the Theme argument is connected to the VN with GEN marker no), but in (11b) the Theme argument is also realized outside of the projection of the VN.

G&M argue that Argument Transfer is necessary to avoid a violation of the θ-criterion. As mentioned earlier, suru has only a skeletal argument structure. This means that suru does not subcategorize for VNs and does not assign θ-role to them; however, VNs, by virtue of being nouns, need to be licensed somehow just like any other NPs. Argument Transfer comes into play here. Argument Transfer extracts arguments from VNs, giving them to suru, and thereby creating an intrinsic relation between VNs and suru. This relation in turn enables suru to subcategorize for VNs in its complement position. Therefore, the role of the light verb suru in the LVC is vital in spite of what the name may suggest: (i) it licenses VNs by making Argument Transfer possible, (ii) it enables the arguments of VNs to appear in surface syntax by assigning extracted θ-roles to arguments which appear external to the VN, and (iii) it gives ACC case to VNs.

1.2. Problems with Argument Transfer

In the previous section we briefly summarized the mechanism of Argument Transfer discussed in G&M. Argument Transfer also has several problems. The most notable problem is that under their analysis we would expect that Argument Transfer occurs only with the light verb suru. However, this is not true. It seems that some aspeсtual markers can function just like light verb suru does.3 It is well known that VNs can case-mark argument NPs when some aspect markers attach to them (Kageyama (1982), Sells (1990)). Consider the following examples with the aspect markerつゆ (while, in the middle of).

---

3 Aspect markers of this kind are zen 'before' and go 'after'.

(12) a. John-no- kendoo-no-RENSYUU
   J-GEN  Japanese fencing-GEN-practice
   'John's practice of Japanese fencing'

b. *John-ga kendoo-o RENSYUU
   J-NOM    -ACC

c. John-ga kendoo-o RENSYUU  tyuu
   J-NOM    -ACC    while
   'while John was practicing Japanese fencing'

d. John-ga kendoo-no-RENSYUU  tyuu
   J-NOM    -GEN-
   'while John was practicing Japanese fencing'

In (12a) the head noun RENSYUU is modified by John and kendoo with Genitive case. Assigning structural case is impossible in a case such as in (6b); however, when the aspect marker tyuu (while) is attached to the VN RENSYUU, case assignment becomes possible as in (12c and d). The similarities between (12) and (7) are striking. We cannot expect the aspect marker tyuu to have the same skeletal argument structure as the light verb suru and assigns ACC case. Therefore, the Argument Transfer approach cannot be applied here.

Furthermore, Argument Transfer does not explain why ACC case alternation in (7) is possible and is productive. If [VN + suru ] pairs are derived and are listed in the lexicon we expect a high degree of rigidity in them similar to English idioms such as kick the bucket, a highly set expression. However, the case alternation implies that the [VN + suru ] pairs are not as fixed as English idioms. Although it is true that the direct object in kick the bucket is case marked in some sense, one could use the idiom in a non-idiomatic sense as the result of syntactic subcategorization and the usual case marking. If one used the idiom in this way it of course loses the idiomatic reading. The case alternation we observe in (7) does not change the meaning of the sentences at all. As we will see shortly, it is much more natural to think that the case alternation is brought about for some syntactic reasons.

Another problem comes from the treatment of VNs and suru in that "the (V)Noun and suru are listed together in a derived lexical entry" (p. 213). They cite the following example ((19) in G&M) in support of their claim.

   J-TOP      section chief-to promotion suru
   'John obtained promotion to section chief.'
b. ??John-wa butyoo-ni SYOOSIN-o sita.
   J-TOP section chief-to promotion-ACC suru
   'John obtained promotion to section chief.'

ACC case cannot occur with the VN SYOOSIN. According to the Argument Transfer approach, this is mysterious. In fact, they claim that this asymmetry is due to lexical gap in some speakers. However, ACC case becomes necessary if we fully specify the VN to be N. Compare (14).

   J-TOP section chief-to unprecedented-GEN-promotion-ACC suru
   'John obtained unprecedented promotion to section chief.'

   J-TOP section chief-to unprecedented-GEN-promotion suru
   'John obtained unprecedented promotion to section chief.'

The VN is modified by another noun irei (unprecedented) in (6), which makes that the categorical status of the VN is N. In this situation, ACC case becomes obligatory. This is also true for other VNs as well. In (7b), repeated as (15) below, the VN KENKYUU is fully specified as N since saikin (bacterium) is connected by no, and the ACC case is obligatory.

(15) John-ga [saikin-no-KENKYUU]-o /*ø si-ta.
   J-NOM bacterium-GEN-study-ACC do-pft.
   'John studied the bacterium.'

Therefore, the data in (13) does not support the claim of VN and suru being listed in the lexicon as a pair. VNs must be subcategorized and case marked through syntactic processes.

2. Nature of VN

In the previous section, we have seen the mechanism of Argument Transfer and some of its resulting problems. Let us turn to the syntactic analysis of the LVC. The paradigm shown in (12) gives us crucial evidence for determining the categorical status of VNs and the structure of the entire constituent of this type. The sentences in (12) are repeated here as (16) for convenience.

(16) a. John-no-kendo-no-RENSYUU
   J-GEN Japanese fencing-GEN-practice
   'John’s practice of Japanese fencing'
b. *John-ga kendoo-o RENSYUU
   J-NOM -ACC

c. John-ga kendoo-o RENSYUU tyuu
   J-NOM -ACC while
   'while John was practicing Japanese fencing'

d. John-ga kendoo-no-RENSYUU tyuu
   J-NOM -GEN-
   'while John was practicing Japanese fencing'

The contrast between (16a and b) shows that RENSYUU is treated as N,
not as V. This is so because kendoo and RENSYUU are connected with the
GEN marker no as in (16a). Since it is N it cannot assign V related case
such as ACC as shown in (16b). (16c) shows that the attachment of the
aspect marker somehow enables ACC case to be assigned to the NP kendoo. The question is what assigns the ACC case and how it is done.
Since the aspect marker presumably does not assign case there is only one
candidate for the case assignment, i.e., the VN RENSYUU. If this is
correct, the VN RENSYUU is denominalized and turns itself into some
kind of a verb taking kendoo as its complement NP. Furthermore, if the
VN is now a verb there should be a subject of the VN as required by the
Extended Projection Principle (Chomsky (1981)). In other words, (16c) is a
Complete Functional Complex (Chomsky (1986)) with SUBJECT. This
prediction is confirmed because (17) is ambiguous in reference if (16c) is
embedded within.

(17) John-ga kendoo-o RENSYUU tyuu nai-ta.
    J-NOM -ACC practice while cry-pft
    'John_i cried while he\textsubscript{i/j} was practicing kendo.'

(17) has the following structural differences schematized in (18a and b).

(18) a. John\textsubscript{i}-ga [e\textsubscript{i} kendoo-o RENSYUU tyuu] naita.

b. e\textsubscript{j} [John\textsubscript{i}-ga kendoo-o RENSYUU tyuu] naita.

Not only ACC case but NOM case can be assigned in (18b). This is possible
because NOM case assignment is done under the strict c-commanding
condition of I\textsuperior (Whitman (1990), Takezawa (1988)). The next question is

\textsuperscript{4} According to Whitman (1990) and Takezawa (1987), NOM case is
assigned by the head government by I\textsuperscript{0}. 
how the VN RENSYUU is denominalized given (16a) in which it cannot 
subcategorize and predicate NPs like other verbs do. My proposal here is 
that the VN RENSYUU moves up into I⁰ position and incorporates with it 
thereby acquiring verbal properties.⁵

It was pointed out to me by a reviewer that the Sino-Japanese aspect 
markers are categorically N, thus they are not likely to occupy I⁰ position 
assuming that I is [+V] in nature. It was also pointed out that the DAT 
marker ni can follow these aspectual markers as in “[kendoo no 
RENSYUU tyuu]-ni”. If the Case Resistance theory of Stowell (1981)

(i) 

\[
\begin{array}{c}
\text{CP} \\
\text{spec} \\
\text{C'} \\
\text{IP} \\
\text{spec} \\
\text{I'} \\
[V_i^{o} + \text{Neg}^{o}]_j + I^o_k \\
\text{NP ga} \\
\text{NegP} \\
\text{spec} \\
\text{Neg'} \\
\text{VP} \\
\text{spec} \\
\text{t}_j \\
\text{spec} \\
\text{t}_i
\end{array}
\]

In this structure, [spec VP] is always governed by I⁰ (Lasnik & Saito 
(1989)). The subject is base generated at [spec VP] position and is given 
NOM case by the head government by I⁰. I take the strict position on case 
marking that not only ACC case assignment to a complement, but also 
NOM case assignment to subject is done by canonical head government. 
A verb necessarily moves up to I⁰ and forms a constituent [V + I⁰] 
because both V and T are bound morphemes.

⁵ The movement creates the following structure:

(i) 

\[
\begin{array}{c}
I^o \\
VN^o \\
V^o
\end{array}
\]

This is supported by the fact that the VN cannot be topicalized leaving I⁰ 
behind.

(ii) * [John ga kendoo o rensyuu]-wa suru.

Verbal properties can be acquired because of the event reading which the 
aspect marker forces.
which says that [+V] element, or case assigners in general, cannot receive case is correct, then the fact that *ni can follow the aspect marker shows that it is not a case assigner such as V. This further supports the categorical status of the aspect marker as N, and it is in direct conflict with the assumption that I is [+V] in nature. The position which I have been adopting here is that since these aspect markers force the event reading of the VN as noted in fn. 5 above, we cannot treat them on the par with ordinary N which lacks such function. What can be the member of IP is basically an empirical matter; however, the distinction between these aspect markers and ordinary concrete N must be captured. For instance, the fact that nothing can intervene between the VN and these aspectual markers suggests that they are in a strong selectional relation. We cannot even have the GEN marker *no as the ungrammaticality of “*RENSYUU no tyuu” shows. Recall that no is used for the diagnostics test for nounhood.6 This structural selection is another property which concrete N lacks.

As for the DAT marker *ni attachment, it is not at all clear that this *ni in “[kendoo no RENSYUU tyuu]-ni” is an instance of DAT case assignment. Some of the case particles in Japanese such as *ni have additional functions which has nothing to do with the structural case marking. It is true that *ni can follow tyuu in (17) as in “John ga [[kendoo o RENSYUU tyuu]-ni ] naita”. This, however, does not mean that the main predicate nak ‘cry’ assigned structural DAT case to the embedded clause. Naku ‘cry’ is an intransitive verb and cannot assign such case. Ni in this case is rather an adjunct time specifier of some sort, but not the case particle for DAT.

Returning to the previous discussion, the structure of the embedded clause is the following.

(19) (= (18b))

```
       VP
         /\  
        /   
       IP  Vo
          /\  
         /   
        I'   nak
          /\  
         /   
        VNP  I'o
          /\  
         /   
        spec VN' [RENSYUU i + tyuu]
          /\  
         /   
        John ga VN'o
          /\  
         /   
        kendo o ti
```

6 It may be better to think that they are, say, some sort of modals. In English we have elements like ‘will’, ‘must’ or ‘may’ which we are not sure what grammatical category they fall into. See also (32) below.
The VN RENSYUU has the following argument structure.

(20) RENSYUU: (Agent, Theme)

To realize the arguments on the surface syntax, it moves into IO position and gain verbal properties including case assigning property. Note that this is exactly the same schema as in ordinary verb cases in Japanese (Whitman (1990)). Thus, we can account for the ambiguity in (17) without extra complexities. We can also clarify, most importantly, the mechanism VNs use for realizing their arguments on the surface syntax.

(16d) is, however, problematic to the analysis laid out above. The problem is two fold. First, in (16d) the VN RENSYUU appears to be N since it is combined by the GEN case marker no. If kendoo no RENSYUU is one complex NP, it needs case to avoid a Case Filter violation; however, ACC case is not available here.

(21) *John-ga kendoo-no-RENSYUU-o tyuu
    J-NOM -GEN -ACC

Second, (16d) is not in accordance with Burzio's Generalization (1986) in that the Agent θ-role is assigned without ACC case. Though I do not have any definite answer to these problems at this moment, I will show possible directions for the solution. The problem is that there is no case assigner for the NP assuming that the head of IP tyuu cannot assign ACC case to it. One possible but rather speculative solution is that the VN RENSYUU incorporated with IO in the similar structure as (19), and the modifying N kendoo is modifying the trace. ACC case is abstractly assigned to the trace in the sense of Government Transparency Corollary (Baker 1988). Because of the bound morpheme like character of the ACC case particle o, it cannot appear on the surface. The structure would be the following.

(22) John-ga [kendoo-no-ti]_VP RENSYUUi-tyuu

The modification with the GEN marker no is possible presumably because the head RENSYUU has featue [+N] as well as [+V]. Another possible solution is to say that RENSYUU is licensed as N to be the complement of a phonetically null VO, and the VN moves up to IO via VO, say empty suru, position (Whitman p.c.). Under this conception, the derivation would be the following.

(23) John-ga [kendoo-no-ti]_NP ti_iVP RENSYUUi-tyuu
It is not immediately clear which solution is preferable; however, I will sketch some evidence which may shed some light on the matter. This evidence shows (i) that suru occupies V₀ position and VNs appear in the complement position of suru, but (ii) the aspect marker tuyu occupies I₀ position and VNs appear in the complement position which is normally occupied by V.  

2.1. Empty Suru

The evidence comes from some morphological consideration of the aspect markers zen (before), tuyu (while) and go (after) on the one hand and mae (before), naka (while) and ato (after) on the other. The reading of the aspect morphemes in the first group, zen (before), tuyu (while) and go (after) are based upon Chinese readings and are called On-Yomi (or Chinese style reading). As almost all Chinese characters in Japanese do, they also have another way of reading based upon native Japanese words which are called Kun-Yomi (or Japanese style reading). These are the reading of the second group. Thus, the same Chinese character in Japanese usually has two different readings. These are schematized in (24).

(24) Aspect marker | On-Yomi | Kun-Yomi
---|---|---
a. ‘before’ | zen | mae
b. ‘while’ | tuyu | naka
c. ‘after’ | go | ato

An interesting fact is that this distinction has an effect on suru insertion in that suru needs to be inserted only when these aspect markers attach to VNs with their Japanese Kun-yomi style. Compare the following phrases.

7 A reviewer reports the following sentence in which ‘John’ and kendoo are connected the GEN marker no, and the complex NP receives ACC case.

(i) John no kendoo o RENSYUU-tuyuu

The intended reading of the sentence is ‘during John’s practice of kendo’. I found that some native speakers have difficulties accepting the sentence with the intended meaning. The most natural reading for this is ‘during (someone’s) practicing John’s kendo (i.e., a special school of kendo which John established)’. This reading is consistent with what we have been discussing, i.e., [John no kendoo] is a complex NP and ACC case is assigned to it by the incorporated RENSYUU and the aspect marker tuyu.
(25) \ VN + Aspect \hspace{1em} \text{On-Yomi Style} \hspace{1em} \text{Kun-Yomi Style} \\
\hspace{1em} a. ‘before the practice’ \hspace{1em} \text{RENSYUU-zen} \hspace{1em} \text{RENSYUU suru mae} \\
\hspace{1em} b. ‘during the practice’ \hspace{1em} \text{RENSYUU-tyuu} \hspace{1em} \text{RENSYUU suru naka} \\
\hspace{1em} c. ‘after the practice’ \hspace{1em} \text{RENSYUU-go} \hspace{1em} \text{RENSYUU sita ato} \\

\text{Suru} insertion is impossible with On-yomi style reading.

(26) a. *RENSYUU suru-zen \\
\hspace{1em} b. *RENSYUU suru-tyuu \\
\hspace{1em} c. *RENSYUU sita-go \\

Some of the Kun-yomi style readings without suru are also impossible.

(27) a. ?RENSYUU mae \\
\hspace{1em} b. *RENSYUU naka \\
\hspace{1em} c. *RENSYUU ato \\

The contrasts among (25-27) show that the Japanese native Kun-yomi aspect markers necessarily subcategorize suru immediately below it, while the Chinese-originated On-yomi aspect markers do not. If both the Kun-yomi aspect markers and the Chinese On-yomi aspect markers are in I^0 position, and the position immediately below is VP, then this leads us to the following structural contrast between the two.

(28) a. Kun-yomi (Native Japanese) \hspace{1em} b. On-yomi (Chinese origin) \\

\begin{tikzpicture}[level distance=1.5cm, level 1/.style={sibling distance=3.5cm}] 
\node {VN} 
    child {node {V} edge from parent node [above] {suru} 
        child {node {I} edge from parent node [above] {naka}} 
    } 
    child {node {RENSYUU}} 
\end{tikzpicture} 

\begin{tikzpicture}[level distance=1.5cm, level 1/.style={sibling distance=3.5cm}] 
\node {VN} 
    child {node {I} edge from parent node [above] {tyuu} 
        child {node {V} edge from parent node [above] {RENSYUU}} 
    } 
\end{tikzpicture}

This view is confirmed by the fact that nothing can intervene between RENSYUU and tyuu. Negation, for example, can appear only in (28a), but not in (28b).
(29) a. Gakusei-ga kendoo-no-RENSYUU-o si-nai naka, students-NOM -GEN-practice-ACC do-neg while 
sensei-wa dete it-ta.
teacher-Top leave go-pft.
‘While students were not practicing Kendo, the teacher left.’

b. *Gakusei-ga kendoo-no-RENSYUU zya-nai tyuu, neg while 
sensei-wa dete it-ta.

The natural explanation for these differences can be found in a morpho-
logical difference between On-yomi and Kun-yomi aspect markers that the 
former are treated as bound morphemes while the latter are not. The Kun-
yomi aspect markers can appear independently as nouns.

(30) a. mise-no-mae store-GEN-front 
‘in front of the store’

b. ame-no-naka rain-GEN-during
‘during the rain’

c. rensyuu-no-ato practice-GEN-after 
‘after the practice’

The fact that they are connected by no shows us that they are nouns. Also 
when we negate them, the connective word -zya- follows them which is 
one of the typical property of nouns in Japanese.

(31) a. mise- ni iku mae zya-nai stores-Loc. go before neg.
‘It was not before going to the store.’

b. ame-no-naka zya-nai rain-GEN-while neg.
‘It is not during the rain.’

c. RENSYUU-no-ato zya-nai practice-GEN-after neg.
‘It was not after the practice.’
We can see that the On-yomi aspect markers are not nouns because we cannot connect them with nouns with no. This is shown in (32).

(32) a. *rensyuu-no-zen  
b. *rensyuu-no-tyuu  
c. *rensyuu-no-go

This data strongly suggests to us that the On-yomi aspect markers must attach directly to VNs, while the Kun-yomi aspect markers usually cannot. Although On-yomi and Kun-yomi aspect markers both share the same Chinese characters, they belong to different grammatical categories presumably based on Chinese grammar and Japanese grammar.

There is another empirical fact which also supports the view that the On-yomi aspect markers directly select VNs. If there is phonetically null suru, then the structure would be [[[kendoo no RENSYUU] (suru)] tyuu]. If the empty suru is a full fledged verb, then we would expect it to assign ACC case to the VN. However, this is not the case as in *[[[kendoo no RENSYUU] o] tyuu].

3. VNs with Suru

We have analyzed the structure of VNs with aspect markers and have found that the syntactic movement analysis of VNs can explain case assigning alternations and complex NP formation naturally without postulating any extra device. We have also found a strong structural parallelism between the structure of [VN + Asp.] and other VPs in Japanese. We argued that Argument Transfer is simply not applicable in these cases. In this section, we turn our attention to the structure of the LVC. I will apply the movement analysis we have developed above to the LVC and show (i) the LVC also patterns with other VPs and the [VN + Asp] cases, (ii) that the verb suru is a real verb and there is no distinction between ‘heavy’ and ‘light’ suru, (iii) that the realization of arguments in VNs takes place only when VNs are verbalized by the movement, and (iv) if VNs are subcategorized as a complement NP, they act just like other subcategorized NPs to that position.

First, consider the following paradigm with suru.

(33) a. John-no-kendoo-no-RENSYUU  
   J-GEN-   -GEN-practice  
   ‘John’s practice of kendo’

   J-NOM   -ACC practice do-impf  
   ‘John practices kendo.’
   J-NOM -GEN-practice-ACC do-impf
   'John does practice of kendo.'

As in (33b and c) when suru is attached to RENSYUU, ACC case is assigned, but in isolation ACC case cannot appear as in (33a). The explanation of the possibility and impossibility of ACC case assignment is in large part parallel to the explanation we have developed with VNs with aspectual markers in 1.2. Let us examine the structure [VN + suru ] and the alternations on ACC case assignment. We have seen in (16c) that RENSYUU has a full argument structure and can assign ACC case when it moves into IO position and gains verbal properties.

(34) (= (16c)) John-ga kendo-o RENSYUU tyuu
       J-NOM -ACC while
       'while John was practicing Kendo'

This means that the VN RENSYUU itself is a potential ACC case assigner. Since the verb suru is also an ACC case assigner, there are two potential ACC case assigners in (33b and c). However, they cannot assign ACC case freely.

(35) *John-ga kendo-o RENSHYUU-o suru.
       J-ACC -ACC

This is expected since RENSYUU has not moved into VO position. Further, there is another well known fact in Japanese that a clause cannot contain more than one ACC case (Double ACC Constraint, Kuno (1973)). Given the Double ACC constraint, how do we account for the ACC case alternation LVC exhibits in (33b and c)? I will propose the following. Suppose that the verb suru is a real verb and takes a complement NP. In both (33b) and (33c) the VN RENSYUU is subcategorized by suru as its complement. In (33b) the VN RENSYUU moves up to VO position to gain verbal properties and realizes its arguments, parallel to the movement into IO position of the aspect marker in (35). The VN RENSYUU can assign ACC case only if it moves into VO position and incorporates with suru. Since the compound [RENSYUU- suru ] acts like one verb, it has only one ACC case to assign, and the Double ACC Constraint in (35) is naturally explained. In a sense, this is similar to what Argument Transfer does, but we achieved it with incorporation in syntax rather than lexical derivation.

The presence of the case morpheme o on the right of the VN in (33c) shows that the verb suru assigned ACC case to the VN, and the VN RENSYUU did not move into VO position. That is to say the VN
RENSYUU is a true complement NP. This is why any modifying NP has to take GEN case no. This is schematized under (36).

(36) a. 

\[
\begin{array}{c}
\text{VP} \\
\text{spec} \quad V' \\
\text{John ga} \quad \text{VNP} \\
\text{spec} \quad \text{VN} [\text{rensyuu} + \text{sur-}] \\
\text{e kendoo o} \quad \text{VN}^0 \\
\text{t}_j \\
\end{array}
\]

b. 

\[
\begin{array}{c}
\text{VP} \\
\text{spec} \quad V' \\
\text{John ga} \quad \text{NP} \\
\text{spec} \quad N' [\text{sur-}] \\
\text{kendoo no} \quad \text{N}^0 \\
\text{rensyuu} \\
\end{array}
\]

(36a) is the case in which the VN RENSYUU moves into V^0, thereby gaining verbal properties and realizing its arguments on the surface syntax. The complex V further moves up to I^0 to pick up the tense morpheme. The subject position of VNP is empty since NOM case is not available there. Recall that NOM case is assigned by strict head government by I^0 (Whitman (1990), Takezawa (1988)). (36b) is the case where the whole VN RENSYUU is subcategorized and case-marked by the verb suru. The NP Kendoo forms a modification relation with the head noun by using GEN case. This analysis can explain the case alternation fact very naturally within the framework of well motivated principles of grammar. It does not need Argument Transfer which is a device special to LVC while keeping the lexical properties of VNs. Since we do not need Argument Transfer we have no motivation to distinguish suru into 'light' and 'heavy' kinds. Suru in LVC is unambiguously 'heavy', or a real verb.

There is evidence which shows that RENSYUU in (33b) is specified as a noun. Consider the following sentences.

(37) a. Bill-no-inu-no-RENSYUU
    B-GEN-dog-GEN-practice
    'Bill’s practice of the dog'

b. John-ga [Bill-no-inu-no-RENSYUU ]-o si-ta
    J-NOM B-GEN-GEN-ACC do-pft
    'John did Bill’s practice of the dog.'

(37a) is ambiguous in that it means either (i) 'the exercises of Bill's dog' or (ii) 'Bill's training of the dog' depends upon the structural analysis. The former reading has the structure of [[Bill no inu] no RENSYUU] whereas the latter meaning has the structure of [Bill no [inu no RENSYUU]]. (37b) is also ambiguous in that it means either (i) that John trained Bill's dog, or (ii) that John practiced the role of Bill's dog (in the play). Surprisingly, (37c) is unacceptable. This contrast can be interpreted as follows. In (37a) RENSYUU is the head noun of the complex NP and any sort of NPs can modify the noun using GEN case as long as the semantics allows them to. The relations among these NPs do not change in (37b) since RENSYUU is still the head noun of the complex NP. Thus, these NPs Bill and inu (the dog) are not the arguments of RENSYUU. (37c) is unacceptable because only the arguments of the VN RENSYUU can appear in this construction due to the verbal properties of RENSYUU which are gained by the movement into VO position.

However, one may say that what syntactic head movement and incorporation can do seems like what Argument Transfer does in the lexicon since, after all, they have to merge the arguments of VNs and the case marking ability of suru. In other words, our analysis would be just a syntactic equivalent of Argument Transfer. There are basically two reasons to keep the 'syntactic' nature of our analysis. First, Argument Transfer does not explain the ACC case alternation fact. If the unitary predicate of [VN + suru] were derived and listed in the lexicon, the case alternation would be a mysterious fact about the predicate. We would probably have to say that it is an accidental and a primitive property of the predicate. Our syntactic analysis, on the contrary, can integrate and explain it within the well motivated system of grammar. In other words, our syntactic analysis captures something fundamental and more general to grammar. Second, the 'light' and 'heavy' suru distinction does not seem to be well motivated. In fact, there is evidence which shows that there is a true auxiliary suru in Japanese just like English auxiliary do. This auxiliary suru appears directly at IO position in the way we have seen in the On-yomi aspect markers. I will turn to this question immediately below.

3.1. Auxiliary suru

We have seen some syntactic consequences of incorporation of VNs with IO and VO above. VNs are, however, not a unitary group of words, and there are some VNs which do not allow ACC case to appear even with the presence and the incorporation to suru. The VNs we are going to consider in this section are unaccusative VNs. I will list some of them under (38).
(38) Unaccusative VNs
TANZYO0 (birth), AMAMORI (leak), ZISUBERI (landslide),
ANTEI (stable) SIKOO (success), SIPPATU (leave), ZUTUU
(headache) (Miyagawa 1987, 1989)

With this type of VNs, the presence of suru does not have much substance compared with the LVCs in the previous sections. In particular, ACC case cannot appear in sentences with these VNs even with incorporation. Observe the following pair of sentences.

(39) a. *?Akayten-ga TANZYO0-o si-ta
    the baby-NOM birth-ACC do-pft
    'The baby was born.'

a'. Akayten-ga TANZYO0 si-ta

b. *Yane-ga AMAMORI-o si-ta
    the roof-NOM leak-ACC do-pft
    'The roof leaked.'

b'. Yane-ga AMAMORI si-ta (b. is taken from Dubinsky (1989))

In both (38a and b) the VNs incorporate with suru but ACC case is not available. This is against what we have been discussing above. If suru is unambiguously 'heavy' it should be able to assign ACC case. The answer to this problem lies in the nature of unaccusativity. Unaccusatives, by hypothesis, lack an external θ-role, and the only θ-role it has originates within VP (Perlmutter (1978), Belletti & Rizzi (1981)). The VP internal θ-role Theme is later realized as a Theme subject for case reasons. Miyagawa (1989) with 'light' suru analysis says the unavailability of ACC case is the natural consequence of Burzio's Generalization (1986). Since unaccusative VNs do not give suru an external θ-role, suru cannot assign ACC case. If it does in absence of the external θ-role it would result in the violation of Burzio's Generalization.

This solution is not available for us since we take the view that there is no 'light' suru. The solution which I propose here is the following. With the unaccusative VNs suru is truly a 'dummy' verb much like English auxiliary do, and is directly generated under I0 to denominalize the VNs. This is exactly parallel to the On-yomi (Chinese style) aspect markers. Therefore, the structure for (39b'), for example, would be the following.

---

The Theme argument yane (the roof) is going to be realized with NOM case later. Suru is under I\(^o\) to hold the tense and the aspect morphemes. After incorporation, the VN AMAMORI (to leak) becomes an unaccusative V and discharges the Theme role.\(^9\)

4. Summary

The analysis presented here does not label the verb suru in the LVC as 'light' or 'heavy'. It is unambiguously a 'heavy' verb. The differences in case marking and complex NP formation are explained by the various interactions between VNs and I/VP in well motivated syntactic theories without postulating extra devices such as Argument Transfer. This dras-

---

\(^9\) An alternative view is given by Miyagawa (1987) that the verb suru becomes unaccusative after the features of the unaccusative VN percolate up to suru. In his theory, suru is also treated as a true verb, but the percolated features make the verbs inert. This is a possible direction since it keeps suru 'heavy' in any situation. This analysis is further supported by the possibility of unaccusative suru. Consider the following sentence pairs.

(i) a. Ookina oto ga sita.
   large sound NOM do-pft
   'There was a big sound.'

   a'. *Ookina oto o sita.

b. Iyana kanzi ga suru.
   unpleasant feeling NOM do-impft
   'I feel unpleasant.'

   b'. *Iyana kanzi o suru.

As shown in these pairs ACC case is not available even with the existence of suru. This fact can be accounted for if we take suru in these cases as unaccusative. In fact, these NPs with NOM case are more like Theme rather than Agent. I will leave the question of the existence of unaccusative suru open.
tically simplifies the LVC analysis. The most crucial part of the analysis given above is that VN's are verbalized when they are incorporated with I₀ or V₀, and only in this case can they realize their argument on the surface syntax. If they stay in their base generated positions, they are concrete nouns. This analysis makes a strong parallelism with other VP/IP interactions in Japanese syntax. This is clearly a desired situation.

The categorical ambiguity may originate in the fact that almost all loan words in Japanese are registered as nouns regardless of their original category. VN's are also classified as nouns in Japanese grammar; however, their semantic content allows them to be used as argument taking verbs. The verb movement we saw is the way to verbalize these nouns. We can predict, then, that VN's should not be limited to Sino-Japanese words. If Japanese borrow verbs from any other language the same mechanism ought to be available. This prediction is correct. There are many VN's that originated in English such as RISAATI (research) suru, NEGO (negotiation) suru, INBESUTO (invest) suru, PAAKU (park) suru and so on. The process is very productive, and a productive process like this has to be based upon the fundamental morphological and syntactic rules of the language. It seems that our analysis can give us a systematic account for the LVC.

References


Chomsky, Noam (1986a) Barriers, MIT Press.

Chomsky, Noam (1986b) Knowledge of Language, Praeger.


Whitman, John (1991) 'String Vacuous V to COMP,' manuscript of a talk given at GLOW, 1991
Lexical Subjects in Finite and Non-Finite Clauses

Almeida Jacqueline Toribio
Cornell University

Central to the discussion of the distribution of lexical, or overt, argument nominals in the framework of Government-Binding Theory are the modules of Theta Theory and Case Theory. We begin with a brief discussion of Theta Theory, the theory of thematic relations, which provides for the assignment of thematic roles, and a well-formedness condition, the Theta Criterion, which ensures that all theta-roles have been properly assigned. We then turn to our central concern, Case Theory, which is somewhat similar to Theta Theory in that it consists of mechanisms for the assignment of abstract Case, as well as a well-formedness condition applying at S-structure, the Case Filter. In its traditional formulation, the Case Filter requires that all NPs, save for the infinitival subject PRO, have Case.

In our discussion, we observe that the assignment of theta-roles and abstract Case proceeds under certain structural configurations. In particular, we concentrate on the assignment of Case, and demonstrate that the requisite constituent arrangements are constrained to two relations which are in evidence throughout the grammar—government and binding, the former referring to a relation of strict locality, as in (ia), the latter to a relation of Specifier-head agreement, understood as a form of binding, such as that illustrated in (ib):

(i) a. government

\[
\begin{array}{c}
X' \\
X & YP \\
\end{array}
\]

b. binding agreement

\[
\begin{array}{c}
XP \\
NP_i & X' \\
X_i & YP \\
\end{array}
\]

Although both relations are, in principle, available to a language, we will demonstrate that Case-assignment may be constrained to one or the other configuration by independent factors concerning the Case-assigning head. For example, we explore the possibility that the option between assigning nominative Case under government or under agreement is

* This paper represents ongoing dissertation research. I am indebted to Margarita Suñer, Edward Rubin and Wayne Harbert for their continued assistance. Thanks also to an anonymous reviewer for helpful comments.

E. Rubin and M. Bernstein (eds.),
© 1993 by Almeida Jacqueline Toribio
related to the categorial nature of the Case-assigning head: Lexical heads assign Case under government whereas non-lexical categories assign Case under Specifier-head agreement. Therefore the possibility of assigning nominative Case under government is directly related to the nature of INFL, as characterized in (ii):

(ii) Lexical INFL assigns Nominative Case under government.

According to (ii), INFL in a particular language may assign nominative Case under government only if it is lexical, where this possibility is derived from independent considerations: INFL is a non-lexical, i.e., functional, head which shares categorial properties with its lexical complement. On this view, the configuration for nominative Case-assignment in a language would derive from the status of INFL in that language, and not solely from the universal configurationality of Case-assignment.

The divergent patterns of nominative Case-assignment in English versus Spanish therefore result from the different natures of INFL in these languages. Furthermore, we discover that even closely related dialects may differ with respect to the nature of INFL and therefore the structural arrangements in which nominative Case-assignment obtains. Specifically, we will demonstrate that in certain dialects of Caribbean Spanish, INFL is non-lexical and nominative Case is assigned under Specifier-head agreement. This variation in licensing will effect a wide range of consequences in the syntax, which we exemplify with data from a dialect spoken in the Dominican Republic.

More generally, this paper concerns the role of Case-assignment in syntactic licensing. We note, in particular, that structural Case is abstract, in that it encodes a hierarchical relation, which, given our present discussion, can be subsumed under more general principles of grammar. We show that such relationships hold not only of lexical nominals but also of PRO, a conclusion which we derive from the notion of visibility. Accordingly, we put forward a more general condition on the appearance of overt lexical arguments which is consistent with this conception of structural Case:

(iii) Lexical arguments must be properly licensed, where licensing is achieved by:
    a. Lexical government (under strict c-command), or
    b. Binding (coindexation with morphological agreement).

Whereas all NPs, null and overt alike, are subject to the Case Filter, PRO is exempted from the condition in (iii).
1. Theta Theory

The theory of thematic relations, or theta-roles, is best understood relative to a particular predicate. Theta-roles, such as Agent, Experiencer, Theme and Goal, provide a means of characterizing specific semantic relationships which hold between a predicate and the NPs associated with it. For example, in the lexical representation of the predicate run, there is a single theta-role, Agent, whereas the predicate enjoy must be associated with two theta-roles: an Experiencer and a Theme; their respective theta-grids appear below.

(1)  
a. run <agent>  
b. enjoy <experiencer, theme>

Each theta-role is assigned by a head within its domain, e.g., within VP for a verb, with the exception, in traditional accounts, of the external argument, underlined in (1), which is designated as the most prominent argument and is projected outside of the maximal projection of the predicate (cf. e.g., Williams 1981, Hale and Keyser 1986, 1987, Grimshaw 1989).

We assume that theta-roles are assigned systematically, such that the hierarchical prominence relations within a theta-grid are maintained in the structural configurations of a clause. For example, the external theta-role, underscored in (1), will be assigned to the NP in SpecI where it c-commands the other arguments, etc. (cf. Grimshaw 1989). We note that even those analyses in which the subject is generated within the maximal projection of the verb, e.g., those of Zagona (1982), Kitagawa (1986), Koopman and Sportiche (1988), and Kuroda (1988), call for the subject to be generated outside of the projection which includes the verb and its objects. That is, even this type of analysis distinguishes a Specifier position to which nominative Case is assigned and a unique external argument position, to which subject theta-roles are assigned. (We return to such analyses in subsequent discussion.)

Theta-role assignment for objects is direct: A verb assigns a theta-role under government, which is defined below, to the objects for which it is subcategorized.

(2) Government

\( \alpha \) governs \( \beta \) iff \( \alpha \) m-commands \( \beta \) and there is no \( \gamma \), \( \gamma \) a barrier for \( \beta \), such that \( \gamma \) excludes \( \alpha \).

(Chomsky 1986a:8)

The notion of m-command referred to in (2), is defined in the following way:
(3) M-command
α m-commands β if and only if α does not dominate β, and every γ that dominates α dominates β, where γ refers to maximal projections.

The subject theta-role is taken to be 'compositional,' in the sense that it is assigned by the verb and its arguments, i.e., the whole VP, under the m-command definition of government in (3) (Chomsky 1981, 1986a). In this sense, theta-role assignment to objects is direct, as stated, while theta-role assignment to subjects is indirect, for it is mediated through the VP, via predication (cf. Williams 1981). The relevant configurations are illustrated below:

(4) a. \[ V \]
   \[ V_j \]
   \[ NP-\theta_j \]

b. \[ IP \]
   \[ NP-\theta_j \]
   \[ I \]
   \[ VP \]

In (4a), a verb assigns its theta-role directly to its complement NP, and in (4b) a VP assigns its theta-role to the subject in SpecI.

There should be a match between the number of theta-roles in the argument structure of a head and the number of phrases to host those theta-roles. This general well-formedness condition on the assignment of theta-roles is expressed in the Theta-Criterion of (5), which is a constraint on D-structure representations:

(5) Theta-Criterion
Every argument bears one and only one theta-role, and each theta-role is assigned to one and only one argument.
(Chomsky 1981:36)

The expression of theta relations at S-structure and Logical Form is required by the Projection Principle, given in (6), drawn from Chomsky (1981):

(6) Projection Principle
Representations at each syntactic level (i.e., LF, and D- and S-structure) are projected from the lexicon, in that they observe the subcategorization properites of lexical items.
(Chomsky 1981:29).

The Projection Principle ensures that both the thematic and subcategorization requirements of a predicate are projected at each level: The elements selected by a lexical head must appear at all syntactic levels of
representation. That is, (6) provides a means of guaranteeing the projection of D-structure from the lexicon, and of maintaining lexical properties throughout the derivation. Of course, since verbs do not subcategorize for subjects, the subject position does not always receive a theta-role, and might therefore, in principle, remain empty at D-structure. So in order to account for the obligatory presence of a subject position even when not required for thematic reasons, Chomsky proposes the Extended Projection Principle, encompassing the Projection Principle together with the requirement that clauses have subjects (cf. Chomsky 1981).

2 Case Theory: Preliminary Considerations

While Theta Theory is fundamental to the licensing of arguments at D-structure, Case Theory concerns the licensing of arguments at subsequent levels of representation (S-structure in traditional accounts, Logical Form in more recent proposals, e.g., Chomsky (1992)). Formally, Case Theory consists of mechanisms for the assignment of abstract Case, and, of more importance to us here, a well-formedness condition, the Case Filter, traditionally stated as in (7), which applies at S-structure.

(7) Case Filter
     *(non-PRO) NP, if NP has no Case.

Case in (7) refers to structural Case rather than to its morphological instantiation. Structural Case is abstract, in the sense that it need not correspond to any particular morphological manifestation. This is, of course, a necessary assumption in languages without Case inflection, in which the distribution of arguments is nonetheless constrained by the Case Filter. To say that an NP ‘has structural Case’ is simply to say that it is either in a structural Specifier position of, or a government relationship with, an appropriate X° (cf. Harbert and Toribio 1991).

We are therefore in agreement with Harbert and Toribio (1991) that past accounts have confused two quite distinct notions of ‘Case’—(i) morphological Case, i.e., a set of features assigned to a nominal in a certain syntactic relationship with a head of a certain type, e.g., nominative, accusative and various kinds of oblique Case (including ‘lexical Case’, a label for such Case-marking when it is selected by particular predicates), and (ii) structural Case, which is properly construed as a name for a class of configurational relationships. Only the latter plays a role in the Case Filter.

Thus, for example, an NP never satisfies the Case Filter by having nominative Case morphology. Rather, it satisfies the Case Filter by being
in an appropriate relation with an appropriate head. We therefore restate the Case Filter as in (7'):

(7') Case Filter (Revised)
*(nonPRO) NP, if NP is not in a position of structural Case.

Furthermore, following, e.g., Harbert (1989), among others, we assume that the occurrence of lexical Case on an NP does not suffice to satisfy principles of grammar other than the Projection Principle. Lexical, or inherent, Case-marking is determined as a lexical property of certain heads. Such Case-marking is assigned at D-structure by a verb to the arguments it theta-marks (Chomsky 1986a), and it differs from the canonical abstract Case, which may, but need not, have a morphological realization.¹ Default mappings between structural Case and overt morphology, if any, may be overridden by Case morphology determined by lexical Case requirements. This is because, as stated, lexical Case represents a lexical property which, in accordance with the Projection Principle, must be satisfied at all levels. Thus lexical properties take precedence over structural properties where the latter conflict with the former, as the Projection Principle would imply (cf. Freidin and Babby 1984).²

¹ There is certainly some relationship between structural and morphological Case since in languages with case morphology, structural Case tends to be encoded morphologically in a regular way. For example, subjects of clauses are characteristically assigned nominative morphology, while objects of verbs are typically assigned accusative. This relationship is not the concern of the syntactic theory of Case, but is instead a property of the morphological component of a grammar.

² In addition, we note that the analysis of Case-assignment which we envision here allows for non-unique relations between assigner and assignee. First, a Case assigning head may assign Case to multiple NPs as long as these NPs stand in the appropriate structural relation to it. For example, INFL may assign nominative Case to its Specifier and to its complement. Harbert and Toribio (1991) argue that this is evidenced in experiencer constructions, in which the experiencer appears in SpecI at S-structure and the theme is coindexed with an expletive clitic in the INFL-joined position, where it is governed and Case-marked by INFL. Such instances of multiple Case-marking are most transparent in Case-stacking languages such as Korean, where we hold that morphological Case corresponds directly to structural Case. So, for example, in Korean experiencer constructions, the experiencer may appear with both dative
Icelandic provides a striking difference between lexical and structural Case; consider the example in (8), provided by Thorhallur Eythorsson:

(8)  
(a) Mér líka þessar bækur  
    me-DAT like-pl. those books-NOM
    'I like those books.'

(b) Mér líkudu bækurnar án þess að búast við því  
    me-DAT liked-pl. the books without to expect it
    'I liked the books without expecting to.'

The dative experiencer in (8a) is clearly in the structural subject position in derived structure, as illustrated by the fact that it can serve as the controller of an infinitival clause PRO in (8b). We adopt the idea of Cowper (1987) that movement of the experiencer to the structural subject position from within the maximal projection of the verb is forced, in examples like these, by the fact that, although it is lexically Case-marked, it is not assigned structural Case in situ, and must move to a structural Case position to satisfy the Case Filter (cf. also Harbert and Toribio 1991). This structural nominative Case does not show up on the experiencer since it has morphological oblique Case which overrides any structural Case.

Let us turn now to a consideration of the representations under which structural Case is assigned. It has been thought to be assigned in various ways. In English, it is assigned by verbs and prepositions to the elements that they govern. Such configurational conditions on Case-assignment correctly allow Case to be assigned to objects of verbs and prepositions, as in (9), to subjects of infinitival clauses introduced by a prepositional complementizer, as in (10), to subjects of infinitival complements of Exceptional Case Marking verbs, as in (11), and to subjects of small clauses, as in (12):

and nominative Case and the theme is also overtly marked as nominative (cf. Gerdtts and Youn 1988). Second, an NP may be within the Case-assigning domain of two Case-assigning heads. This configuration is attested in ECM constructions, in which the subordinate infinitival INFL assigns nominative Case and the matrix verb assigns accusative. This 'conflict' of multiple structural Cases may be resolved by language-particular conventions. For example, as we saw in the English ECM construction, the more oblique Case, namely, the accusative Case, is visible (cf. Harbert 1989).
(9) a. Bobbie enjoyed the performance of Swan Lake.
   
   b. \[ \ldots \text{V} \]
      \[ \text{V} \]
      \[ \text{enjoyed} \]
      \[ \text{NP} \]
      \[ \text{the performance of Swan Lake} \]
   
   c. \[ \ldots \text{P'} \]
      \[ \text{P} \]
      \[ \text{of} \]
      \[ \text{NP} \]
      \[ \text{Swan Lake} \]

(10) a. For Pat to remain at the party would be a mistake.

   b. \[ C' \]
      \[ \text{C} \]
      \[ \text{For} \]
      \[ \text{Pat} \]
      \[ \text{IP} \]
      \[ \ldots \]

(11) a. Sandy believes the dog to have stolen the cookie.

   b. \[ \ldots \text{V'} \]
      \[ \text{V} \]
      \[ \text{believes} \]
      \[ \text{IP} \]
      \[ \text{the dog} \]
      \[ \text{I'} \]
      \[ \text{to have stolen the cookie} \]

(12) a. Kim considers Kris very intelligent.

   b. \[ \ldots \text{V'} \]
      \[ \text{V} \]
      \[ \text{considers} \]
      \[ \text{SC} \]
      \[ \text{Kris} \]
      \[ \text{AP} \]
      \[ \text{very intelligent} \]

In (9b), the object the performance of Swan Lake receives Case from the governing verb enjoy. In (9c), Swan Lake does not receive Case from the verb since the head noun performance creates a minimality barrier, hence the Case-assigning preposition of must be inserted. In (10), the prepositional complementizer for governs and Case-marks Pat. In (11), the matrix verb believe assigns Case to the embedded subject, under the assumption that the infinitival complement in an Exceptional Case Marking construction lacks a CP which would block government. Finally, in (12),
considers L-marks the AP small clause complement, which is therefore not a barrier for Case-assignment to Kris.

Contrary to the traditional accounts discussed, we will maintain, following Harbert and Toribio (1991), that government for Case-assignment requires a c-command, rather than an m-command, relation between the governing head and the governed XP. C-command is similar to the notion of m-command in (3), but with γ taken to be any node, as shown in (13) from Chomsky (1986a).

(2') Government (Revised)
α governs β iff α c-commands β and there is no γ, γ a barrier for β, such that γ excludes α.

(13) C-command
α c-commands β if and only if α does not dominate β, and every γ that dominates α dominates β. (Chomsky 1986a:8)

Thus, Case-assignment under government is possible to direct complements but not to Specifiers. Therefore, in English, nominative Case-assignment to subjects by INFL cannot be under government, since INFL does not c-command SpecI. Nominative Case, then, must be assigned in some other way.

The assignment of nominative Case to subjects of tensed clauses is traditionally attributed to the inflectional element INFL.\(^3\) There are two basic questions which arise concerning the process of nominative Case-assignment: the first concerns the structural relation thought to hold between the Case-assigning head INFL[+finite] and the subject, the second concerns the effect of the finiteness of that INFL on its ability to assign nominative Case.

With respect to the first question, it is commonly held that INFL[+finite] in English governs and Case-marks SpecI under the extended m-command definition of government. However, subjects cannot get their Case under government by INFL, since, under the definition of government assumed here, INFL does not, in fact, govern the subject position. Instead, we will demonstrate that subjects are Case-licensed through a second mechanism of Case-assignment involving the

---

\(^3\) More recently, researchers have called for the further articulation of INFL into independent functional heads, among these, Tense and Agr (cf. Pollock 1989, Chomsky 1989, among others). However, as such endeavors are irrelevant to the present discussion, we represent INFL as a unified head for ease of exposition.
abstract relation of Specifier-head agreement, as discussed in Koopman and Sportiche (1988), to which we return shortly.

Evidence in favor of such disparate configurations for Case-licensing of subjects versus objects is provided by the fact that the adjacency condition on the licensing of Case on direct objects does not hold in instances of nominative Case-licensing for subjects. In (14a), the subject is not adjacent to the INFL, the presumed licenser of nominative Case; in this instance, nominative Case is licensed under agreement. (14b,c) show that the adjacency requirement does hold for subjects whose Case is licensed under government, by a prepositional complementizer, or by the main verb in ECM constructions.

(14) a. Pat probably will leave.
    b. *Sandy expects for probably Pat to leave.
    c. *Sandy believes probably Pat to have left.

Thus, these data indicate that the lexical categories of verb and preposition assign Case under government, whereas the functional category INFL assigns nominative Case under Specifier-head agreement. We will assume, following Sigurðsson (1991:344) that lexical heads can assign Case only under government. (We return to this in subsequent discussion.)

(15) Lexical heads can only govern under c-command and are therefore incapable of governing their Specifiers.

In addressing the second question, namely, the one concerning the status of INFL, we propose, contrary to traditional accounts, that the finite/non-finite distinction is irrelevant for the assignment of structural Case. The only relevant factor is the configurational relation which holds between the Case-assigning head INFL and its Specifier. Therefore, we hold that the Specifier of a non-finite INFL is a position of structural Case. This supposition is, in fact, independently supported.

One commonly held motivation for the Case Filter is the Visibility Condition, according to which an argument must be visible for theta-role assignment; Case is crucial for an argument to be visible in this sense:

(16) A chain is visible for theta-marking if it contains a Case position.

Therefore, an argument which lacks Case violates the Theta-Criterion (cf. also Chomsky and Lasnik 1991). Chomsky (1986b) incorporates visibility and chain formation in the revised Theta-Criterion in (17):
(17) Theta Criterion (Revised)
Each argument $\alpha$ appears in a chain containing a unique visible theta-position $P$, and each theta-position $P$ is visible in a chain containing a unique argument $\alpha$.
(Chomsky 1986b:97)\(^4\)

Since PRO must be theta-marked, it must necessarily be visible, and hence must be Case-marked. Under the present account, it is assigned Case by non-finite INFL. Under traditional accounts, non-finite INFL is not a Case-assigner, and PRO will therefore not be visible for theta-marking.\(^5\) Consider, for example, (18):

(18) Pat tried [PRO to yodel]

The matrix verb try assigns a theta-role to its subject, and the embedded verb sneeze assigns an independent theta-role to its subject. The embedded subject PRO must be visible in order to receive the latter theta-role. This theta-assignment is only possible if we assume that PRO is Case-marked, as we have claimed.\(^6\)

Therefore the configuration for structural nominative Case in English is that shown in (19):

(19)

\[
\begin{tikzpicture}
  \node {IP}
  \edge {lexical NP/PRO}
  \edge {I'}
  \edge {INFL}
  \edge {...}
\end{tikzpicture}
\]

\(^4\) In (i), for example, the passive subject, the dinosaur, originates as the object of missed; forming a chain with the trace $t$. Movement of the dinosaur to SpecI, the position of nominative Case, renders the chain visible for (direct) theta-assignment by the verb (which assigns a theme theta-role to the position occupied by the tail of the chain).

(i) The dinosaur$_i$ was sorely missed $t_i$

\(^5\) Chomsky (1986b) assumes that PRO receives some type of inherent Case.

\(^6\) We delay the discussion of the complementary distribution of PRO and overt NPs (and pro) until §4.3, where we present a variety of evidence suggesting that infinitival INFL can assign nominative Case, and that the distribution of lexical NPs (and pro) is constrained by independent factors.
The fact that PRO must appear in a position of structural Case crucially affects the interpretation of the Case Filter. Most obviously, the Case Filter can be simplified as in (7"):

(7") Case Filter (Revised)
*NP, if NP is not in a position of structural Case.

(7") allows us to unify lexical and non-lexical NPs with respect to the Case Filter: All NPs are subject to the Case Filter. We will for the most part restrict the discussion in this paper to lexical NPs, in particular, to subjects, although we return to a discussion of the distribution of PRO in §4.3.

To summarize this section, we have shown that Case-assignment proceeds in the configurations of strict c-command government or Specifier-head agreement, where the particular arrangement is dependent on the nature of the Case-assigning head: Lexical heads assign Case under government, functional heads assign Case under Specifier-head agreement. In keeping with this configurationality analysis, we have suggested that even non-finite INFL assigns nominative Case to its Specifier. Lastly, we have reformulated the Case Filter to hold of all NPs, null and overt alike.

3 Nominative Case

We saw in the previous section that structural nominative Case is assigned configurationally in English by the functional category INFL, under Specifier-head agreement. In this section, we consider data from Spanish. We note, in particular, that Spanish differs from English in exhibiting VS(O) word order. In considering this difference, we adopt the framework of Koopman and Sportiche (1988) in which nominative Case-assignment by INFL may also obtain under the configuration of government. These authors suggest that both configurations of nominative Case-assignment are, in principle, available for a language. We diverge from their account in strictly relating the possibility of nominative Case-assignment under government to the nature of the Case-assigning head INFL. Specifically, we have observed that only lexical categories assign Case under government, and we will conclude, therefore, that INFL in Spanish must be lexical.

3.1 The VN-Internal Subject Hypothesis and Nominative Case

In their discussion of the canonical position of arguments, and in particular, the D-structure and subsequent S-structure position of subjects, Koopman and Sportiche (1988) propose the constituent structure in (20):
In (20), NP* is the D-structure position of the subject, NP* is its potential S-structure position, and V^n is a small clause whose predicate is VP (cf. also Sportiche 1988).

Koopman and Sportiche suggest that the constituent structure in (20) can be generalized to hold of all languages. In ‘Class 1’ languages, a subject generated in NP* (SpecV^n) must move to NP* (Specl) for Case-theoretic reasons, as in (21).

(21) Class 1

\[
\begin{align*}
\text{D-structure} & \quad \text{S-structure} \\
\begin{array}{c}
\text{IP} \\
\text{NP}^* \quad \text{I'} \\
\text{I} \quad \text{V}^n \\
\text{NP}^* \quad \text{VP} \\
\text{subject} \\
\end{array} & \quad \begin{array}{c}
\text{IP} \\
\text{NP}^* \quad \text{I'} \\
\text{I} \quad \text{V}^n \\
\text{subject} \\
\text{NP}^* \quad \text{VP} \\
\text{t}_i \\
\end{array}
\end{align*}
\]

By contrast, in ‘Class 2’ languages, a subject may appear at S-structure in its D-structure position NP* (SpecV^n), as in (22).

(22) Class 2

\[
\begin{align*}
\text{D-/S-structure} \\
\begin{array}{c}
\text{IP} \\
\text{NP}^* \quad \text{I'} \\
\text{I} \quad \text{V}^n \\
\text{subject} \\
\text{NP}^* \quad \text{VP} \\
\end{array}
\end{align*}
\]

Thus, these authors propose that Universal Grammar must make available two mechanisms of nominative Case-assignment: Specifier-head agreement and government, as illustrated below.

(23) a. b.

\[
\begin{align*}
\begin{array}{c}
\text{NP} \\
\text{X} \\
\text{X} \\
\text{X} \\
\text{X} \\
\text{Y} \\
\text{Y} \\
\end{array} & \quad \begin{array}{c}
\text{X} \\
\text{X} \\
\text{Y} \\
\end{array}
\end{align*}
\]
Koopman and Sportiche further consider the choice between these Case-assignment mechanisms to be a purely parametric one. That is, they suggest that each language is in principle free to choose between these possibilities.

We diverge from these researchers in suggesting that Case-assignment under government is possible only when the features of the Case-assigning head permit it, namely, when that Case-assigning head is lexical, as per our previous discussion. We suggest that INFL plays a central role in the choice of configuration for the assignment of nominative Case: On our view, when INFL is lexical, it assigns nominative Case under government.

(24) Lexical INFL assigns Nominative Case under government.

In those languages in which INFL is not lexical, nominative Case assignment obtains in the (default) configuration of Specifier-head agreement.

That the functional head INFL may be characterized as properly lexical is not altogether new. Numerous authors have suggested that functional categories take on or share the properties of their lexical complements. For example, Abney (1987) states the intimate relation thought to hold between a functional head and its complement in terms of dual-headedness: A functional projection is headed by both its own functional head and by the head of its lexical complement. Grimshaw (1992) states this relation in terms of extended projections: The functional category is an extension of the lexical projection. Van Riemsdijk (1990) suggests that such a relation is captured categorially: The functional projection is categorially identical with its lexical host projection. On the latter view, INFL is [-N, +V, +F], where [±F] refers to functional status.

The question that arises for the present discussion is which features determine the lexical versus non-lexical status of a head. That is, if the category INFL is functional, and yet bears some properties of its lexical complement, are we to characterize this head as functional or lexical? The response offered here is that languages are free to choose either option. Thus our proposal that INFL can be lexical is not a stipulation designed to yield the correct results for Case-assignment, but rather is a straightforward prediction following from independent aspects of the grammar.

For example, in languages such as English, in which Koopman and Sportiche demonstrate that a subject generated in NP* (SpecVn) must move to NP* (SpecI) for Case-theoretic reasons, as we saw in (21), we conclude that INFL is not lexical. By contrast, in languages such as Standard Spanish, in which a subject may appear at S-structure in its D-structure position NP* (SpecVn), a pattern which we observed in (22), and which is independently motivated by Zagona (1982), Groos and Bok-
Bennema (1986) and Contreras (1987), INFL must be characterized as lexical. Under this account, it is the widely motivated distinction between functional and lexical categories which determines the divergent patterns of Case-assignment: Functional categories assign Case under Specifier-head agreement, whereas lexical categories assign Case under government.

As a concrete example, consider the Spanish example in (25), where the agentive subject varios artistas 'various artists' is generated in NP* (SpecVn). There it is Case-marked under government by the nominative Case-assigning head INFL, which can do so, presumably because it is lexical. (We return shortly to the means by which INFL can govern the subject across the Vn boundary.)

\[ \begin{array}{c}
\text{IP} \\
\begin{array}{c}
\text{NP}^a \\
\text{t}_{1}
\end{array} \\
\text{cantaron} \\
\begin{array}{c}
\text{NP}^* \\
\text{t}_{1}
\end{array} \\
\text{varios artistas} \\
\begin{array}{c}
\text{VP} \\
\text{...}
\end{array}
\end{array} \]

As shown in (25), the verb moves to INFL to support the inflection. In this way, the VS(O) order which is common to Standard Spanish is derived by verb-movement to INFL, while the subject remains in NP* (SpecVn), as shown in (26).\(^7\)

\[(26) \text{ Cantaron varios artistas.} \]

sang-3pl various artists
‘Various artists sang.’

Furthermore, the SV(O) order in (27) is easily accounted for: It results from the raising of the subject to SpecI, for theme-rheme considerations (cf. Contreras 1976, Suñer 1982, Ocampo 1990, Suñer and Lizardi 1992).\(^8\)

---

\(^7\) The use of intransitive verbs in the examples is for ease of exposition only; postverbal subjects are possible with transitive verb as well:

(i) Ayer compró María el nuevo libro de Chomsky.

\(^8\) Spanish also allows a VOS pattern, often termed 'free inversion' (cf. Rizzi 1982, Torrego 1984), a stylistically marked construction which results in the emphasis of the post-VP subject. Previous analyses of VOS order had invoked movement of the subject: The subject is rightward moved and adjoined to VP (cf. Jaeggli 1982, Safir 1982, Burzio 1986).
(27) Varios artistas cantaron.
'Various artists sang.'

The agreement pattern with both VS(O) and SV(O) constituent orders is identical: The verb agrees with the thematic subject in person and number. In accordance with these observations, we will assume a conceptualization of agreement which is similar to that outlined above for Case-assignment. In particular, we consider agreement, like Case-assignment, to be a purely structural relation independent, in principle, from the morphological relation of the assignment of, or the correspondence in, phi-features.\(^9\)

We will therefore assume the configurations of subject-verb agreement to be coextensive with those of nominative Case-assignment—Specifier-head agreement in English, government in Spanish. In this way, the same structural configurations determine both Case and agreement patterns: Agreement between an argument and a head is the morphological realization of the relation of head-government in Class 2 languages, or Specifier-head agreement in Class 1 languages, the relations under which we have shown Case to be assigned (cf. Toribio and Gair to appear). This view is contrary to the proposal of Koopman and Sportiche, who suggest that agreement between an argument and a head is always the morphological realization of the Specifier-head relation.\(^10\)

3.2 Verb-Raising to INFL (Spanish versus English)

It might be proposed that the lexical status of INFL in Spanish versus its non-lexical status in English derives from independent properties of their respective grammars. It is well-known that English and Spanish differ with respect to verb-to-INFL raising. Spanish has an obligatory rule of verb raising (to INFL), whereas English only raises auxiliary verbs (cf. Emonds 1976, 1978, Pollock 1989, Chomsky 1989). This is motivated by

---

\(^9\) Of course, the notion of agreement is a topic worthy of discussion too extensive to be engaged in here. For example, one might question whether agreement corresponds to a syntactic projection (cf. Chomsky 1989 versus Iatridou 1990, among others), and whether only certain structural relations subserve agreement (cf. Mahajan 1989, Sportiche 1990, among others). As stated, in this work we assume that agreement is not the exclusive property of any particular agreement projection, rather, it is a reflex of a particular structural relation.

\(^10\) For converging evidence from Standard and Tunisian Arabic, see Bahloul and Harbert (forthcoming) and Benmamoun (1992).
the word order data above where English was characterized as SV(O), whereas Spanish was characterized as VS(O).

This difference between English and Spanish presents us with one possible explanation for the divergent patterns of nominative Case-assignment in these languages and in general: Under such an account, non-verb-raising languages, such as English, are restricted to nominative Case-assignment in the configuration of Specifier-head agreement, while verb-raising languages, such as Spanish, allow for nominative Case-assignment under government. This could presumably be due to the fact that the raised verb lexicalizes the INFL to which it adjoins.

In addition, verb-raising involves head-to-head movement of the lexical head V, a process which cancels the barrierhood of VN, thus allowing for the INFL+V complex to assign Case into SpecVN (cf. Travis 1984). According to Baker’s (1988) Government Transparency Corollary, a category\(^{11}\) which has an item incorporated into it governs everything which the incorporated item governed in its original position. In other words, the raised verb in INFL governs the VN-internal subject and everything else within the VN.\(^{12}\)

However, deriving the divergent patterns observed from verb-raising and the cancellation of barriers is not without problems. It is unclear, for example, why French, a well-studied verb-raising language, does not demonstrate such a pattern of postverbal subjects. If verb-raising could by itself cancel the barrierhood of VP, then Case-assignment to a postverbal subject should be possible. In addition, as we will see below, although Caribbean Spanish, like Standard Spanish, allows verb-raising, it does not always sanction nominative Case under government. Moreover, although English auxiliaries do raise to INFL, post-verbal subjects are nonetheless still precluded. For these reasons, a barrierhood rationale for the divergent patterns of nominative Case-assignment among these languages proves untenable.

---

\(^{11}\) We note that Baker (1988:64) originally uses the term ‘lexical category’ in his formulation. His discussion refers, however, to an abstract structure in which any head has the head of its complement adjoined to it. We avoid the use of the term ‘lexical’ in this discussion to avoid any possible confusion.

\(^{12}\) It should be noted that INFL can assign Case to the subject in SpecVN even in those cases in which some projections, e.g., any of the functional categories represented in a more fully articulated theory of INFL, intervene between them. Such functional categories are transparent to government, however, and can only be barriers by inheritance.
Therefore, we maintain that INFL in a language may be lexical irrespective of the possibility for verb raising in that language. In particular, INFL in Spanish is lexical, whereas INFL in English (and French) is not.\textsuperscript{13}

3.3 Summary

In this section, we have adopted the V\textsuperscript{n}-internal subject hypothesis put forward in Koopman and Sportiche (1988), according to which subjects are base-generated within the verbal projection. We have suggested that in languages such as Spanish, nominative Case-assignment to the subject in this base position within the verbal projection is made possible by a property of the Case-assigning head INFL. As per our discussion in the previous section, we conclude that this INFL is lexical, thus relating the possibility of VS(O) order to a general property of Case theory: Lexical categories assign Case under government. We have also shown that the lexical nature of INFL in Spanish does not derive from the possibility for verb raising in that language.

4 Parametric Variation: Caribbean Spanish

In this section we observe that Standard Spanish and Caribbean differ significantly with respect to word order. We will argue that this syntactic difference between these dialects of Spanish is a reflex of a single underlying change, namely, the change in the nature of INFL. In theoretical terms, Caribbean Spanish may be viewed as undergoing a shift away from the lexical INFL status of Standard Spanish.

Caribbean Spanish, in the process of change, may be said to demonstrate a dual nature, in accordance with the proposals of, e.g., Roberts (1991) who suggests that in the change from a property \(X\) to a property \(Y\), a language may demonstrate both \(X\) and \(Y\). On our view, then, INFL in Caribbean Spanish may be lexical and therefore can assign Case under government to the subject in postverbal position, just as in Standard Spanish. Of more interest to us here, however, is the fact that INFL may be non-lexical and therefore assign nominative Case in the (default) configuration ofSpecifier-head agreement. For ease of reference, we will refer to the latter situation as Caribbean Spanish D2.

Our findings are consistent with the proposal of Kroch (1989:201) who suggests that syntactic change is tightly constrained by the grammar of the changing language. In Kroch's words "...the grammatical analysis

\textsuperscript{13} The lexical status of INFL also correlates with the possibility of null subjects and the well-noted lack of that-trace effects in Spanish: A pro or trace in SpecV\textsuperscript{n} is lexically-governed (and identified) by INFL.
that defines the contexts of a change is quite abstract. We see that the set of contexts that change together is not defined by the sharing of a surface property, like the appearance of a particular word or morpheme, but rather by a shared syntactic structure, whose existence can only be the product of an abstract grammatical analysis on the part of the speakers." Indeed, the findings to be presented here involve a large-scale reorganization of the syntax of Spanish which derive from a single underlying change in grammar, namely, the abstract nature of INFL.

4.1 Declarative sentences

We noted above that Standard Spanish demonstrates fairly free word order: Subjects either precede or follow the verb, depending on the theme-rheme structure of the clause. This was attributed to two factors—the possibility of assigning Case under government, on the one hand, and the pragmatic fronting of subjects which are thematic in the discourse, on the other, resulting in VS(O) and SV(O) surface orderings, respectively.

In marked contrast, Caribbean Spanish D2 adheres strictly to the the SV(O) pattern. Thus, where Standard Spanish allows the subject to appear in post-verbal position, Caribbean Spanish D2 sanctions a subject in preverbal position, as in (28a); this order is unmarked with respect to theme-rheme considerations. This holds true even of unaccusative verbs like llegar ‘to arrive,’ as in (28b).

(28) a. Los abuelos llamaron.
     'The grandparents called.'

    b. Los abuelos llegaron.
     'The grandparents arrived.'

These data suggest that the INFL of Caribbean Spanish is like the INFL of English: INFL in Caribbean Spanish D2 does not assign nominative Case under government to Spec\(\text{Vn}\), as it does in Standard Spanish, but it must instead assign nominative Case to Spec\(\text{I}\), under Specifier head-agreement. We have argued that INFL in English is syntactically non-lexical. These Caribbean Spanish D2 data strongly indicate that INFL is non-lexical in this language as well.

4.2 Operator-movement constructions

Although Standard Spanish allows relatively free word order in declarative sentences, it is quite restrictive in wh-questions: Following a fronted argument wh-phrase, only the verb-initial order is possible (cf. Torrego 1984).
(29) a. ¿Qué dice Chomsky sobre la política en América Latina? (SS)
    what say-3s Chomsky on the politics in America Latin
    'What does Chomsky say about politics in Latin America?'

    b. *¿Qué Chomsky dice sobre la política en América Latina? (SS)

In (29), the verb raises to INFL and the subject remains in situ (cf. Suñer (to
appear) on the general lack of INFL-to-C movement in Spanish).

This verb-second pattern commonly attested in Standard Spanish is
not in evidence in Caribbean Spanish D2 (cf. Morales 1989). Numerous
researchers have already pointed to the general lack of inversion with
pronouns, as in (30), an observation which dates back to Henríquez Ureña
(1940).

(30) a. ¿Qué yo les mando a esos muchachos? (CSD2)
    what I they-dat. send-1s to those boys
    'What am I going to send to those boys?'

    b. ¿Cuántos años tú crees que ese niño tiene? (CSD2)
    how-many years you-2s think that that child have-3s
    'How old do you think that child is?'

Various proposals have been made to account for these non-standard
word orders, and we mention only a few of them here. For example,
Lipski (1977) proposes that the subject pronoun cliticizes onto the verb,
recovering the person and number features which may be lost by the
weakening of verbal agreement. Such an account, fails, however, since
these subject pronouns do not demonstrate the behavior common to
clitics. Suñer and Lizardi (1991) observe that these pronouns can be
separated from the verb by negation. In addition, unlike clitics which are,
by definition, unstressed, pronouns such as nosotros and usted(es) must be
stressed.

Moreover, the non-inverted pattern of Caribbean Spanish D2 also
occurs with non-pronominal subjects. The corpora on which we report
here are replete with examples in which the inversion common to wh-
questions is lacking, as in (31).14

(31) ¿Cuánto un médico consume en un mes?
    how-much a doctor consume-3s in a month
    'How much does a doctor spend in a month?'

---

14 This data was gathered in May 1991 in various regions of the
Dominican Republic and is further confirmed by the work of Suñer and
Other samples from this Caribbean Spanish D2 corpora illustrate the lack of inversion with negative fronting, as in (32a), exclamatives, as in (33a). Standard Spanish requires inversion in such constructions, as shown in the corresponding (b) examples.

(32) a. Nunca un dominicano había durado tanto en la cárcel. (CSD2)  
   never a dominican had-3s spent so-much in the jail  
   'Never had a Dominican spent so much time in jail.'

   b. Nunca había un dominicano durado tanto en la cárcel. (SS)

(33) a. ¡Qué gordo yo estoy! (CSD2)  
   'How fat I am!'

   b. ¡Qué gordo estoy yo! (SS)

Lastly, consider the focus construction in (34): Whereas Standard Spanish employs an inverted construction (34a), Caribbean Spanish D2 employs a distinct strategy of clefting (34b).

(34) a. Un viaje al campo hizo María. (SS)  
   a trip to-the country made-3s María  
   'A trip to the country, María took.'

   b. María hizo fue un viaje al campo. (CSD2)  
   María made-3s was a trip to-the country  
   'It was a trip to the country that María took.'

The SV(O) pattern of word order in operator movement constructions in Caribbean Spanish D2 is, we believe, a result of the configurations for Case-assignment. These data again suggest that the INFL of Caribbean Spanish D2 does not assign nominative Case under government to Spec\(V^o\), as it does in Standard Spanish, but instead assigns nominative Case to Spec\(I\), underSpecifier head-agreement. Given the lack of INFL-to-C movement, the verb cannot precede the subject.

4.3 Lexical Subjects of Infinitives

We have seen that Case-assignment proceeds in the configurational relations of government or Specifier-head agreement, the choice determined by the nature of the Case-assigning head: Lexical heads assign Case under government, whereas functional heads assign Case under Specifier-head agreement. We have also shown that infinitival INFL must assign Case to the subject PRO, as motivated by considerations of visibility. Thus the Case Filter was characterized as a general requirement on the appearance of overt and non-overt nominals alike.
However, if infinitival INFL assigns Case, then the contrast in (35) can no longer be motivated by Case-theoretical means, i.e., the Case Filter cannot rule out (35a) while not ruling out (35b).

(35)  a. *John to sing would bother me.
       b. [PRO] to sing would bother me.

We hypothesize that lexical arguments, as opposed to PRO, must be subject to a separate filter.

Harbert and Toribio (1991) suggest that lexical arguments are constrained by the licensing condition in (36).

(36) Lexical arguments (and pro) must be properly licensed, where licensing is achieved by:
       a. Lexical government (under strict c-command), or
       b. Binding (coindexation with morphological agreement).

Sigurðsson (1991), based on data from Icelandic, independently proposes that lexical arguments can appear in positions which are locally governed by INFL[+AGR] or a lexical head, where the set of lexical governors is subject to parametric variation, that is an assigner of theta-role or a potential assigner of Case.

Our proposal differs from those of Sigurðsson and Harbert and Toribio in that, INFL may be lexical, irrespective of its finiteness. Thus, in Spanish, finite and non-finite INFL are lexical, whereas in English finite and non-finite INFL are non-lexical. Moreover, we differ from Harbert and Toribio in that a lexical INFL will serve as a licensor according to (36a).

According to (36), lexical arguments should be allowed only as complements of lexical heads or when coindexed with agreement. Thus, for example, we have seen that direct objects are properly licensed as complements of V.\textsuperscript{15} Lexical subjects of finite clauses are licensed by

\textsuperscript{15} We must assume that there may arise special lexical properties which can alter the licensing properties of a predicate. For instance, verbs which do not assign a theta-role to the canonical D-structure subject position (Spec\textsubscript{\textbf{V}}), cannot license an internal object, a correlation which in the literature is generally referred to as "Brezio's Generalization." More specifically, it can be shown that in such a construction, the verb withdraws structural Case from its internal arguments (although lexical Case remains intact). This is true, for example with passives and unaccusatives. In such constructions, the verb cannot serve as a lexical governor for the object, hence the object NP must be licensed by the only available alternative, namely, INFL.
coindexation with agreement (under government when INFL is lexical, or by binding, i.e., Specifier-head agreement, otherwise).

In the Spanish example in (37), the subject is licit in postverbal position: It receives nominative Case from the lexical INFL under government, and is also licensed by INFL, via coindexation with the agreement that it contains (36a or 36b).

(37) a. Bailaron muchas parejas.
   danced-3pl many couples
   'Many couples danced.'

b. Licensing subjects: Standard Spanish

\[
\begin{align*}
\text{IP} \\
\text{INFL}^i \\
\text{NP}^n \\
\text{VP} ...
\end{align*}
\]

In the English configuration (38), the subject receives nominative Case from non-lexical INFL under Specifier-head agreement, and it is licensed by coindexation with agreement (36b).

(38) a. Many couples danced.

b. Licensing subjects: English

\[
\begin{align*}
\text{IP} \\
\text{NP}^n \\
\text{INFL}^i \\
\text{VP} ...
\end{align*}
\]

Lexical subjects of infinitives will be not be licit in English, for although non-lexical INFL does assign Case to the subject under Specifier-head agreement, (36) is not satisfied: There is no lexical governor for the subject (36a), nor is there morphological agreement to license the subject (36b).¹⁶

It is not surprising, then, that such constructions are rescued by inserting a prepositional complementizer, as in (39):

¹⁶ Michael Bernstein points out that the binding (coindexation with morphological agreement) referred to in (36b) is only local binding; a lexical argument in a lower clause would not be properly licensed by coindexation with morphological agreement in a higher clause.
(39) For them to remain at the party would be a mistake.

In (39) we assume that infinitival INFL assigns structural Case to the subject under Specifier-head agreement, and that the preposition serves to license the subject under government (36a). We note, however, that as previously mentioned, in instances of conflicting morphological Case-assignment in non-stacking languages, the more oblique Case is always the one realized (Harbert 1989).

In marked contrast to the English patterns, lexical subjects of infinitives are licit in Standard Spanish, even when not directly governed by a preposition, as in (40):

(40) Al llegar el soldado, todos saludaron.
    on-the to-arrive the soldier, all saluted-3pl
    ‘On the soldier’s arrival, everyone saluted.’

In this construction, we assume that lexical INFL assigns nominative Case under government to the postverbal subject, and, moreover, being a lexical governor, it therefore licenses the postverbal subject (36a).

Nominative subjects are licit in postverbal position in Standard Spanish because INFL is lexical. We have seen in previous sections that INFL in Caribbean Spanish D2 is not lexical and therefore does not assign Case under government, but rather under Specifier-head agreement. Once again, we expect that such a difference in Case-assignment would result in distinct patterns in the infinitival constructions under consideration. This prediction is borne out since, as shown in (41), the subject appears in preverbal position. Crucially, since the subject in preverbal position cannot be licensed by coindexation with agreement (36b), Caribbean Spanish D2 makes use of a prepositional complementizer, which may license the subject under government (36a).

(41) Mis padres trabajaron mucho para yo poder estudiar.
    my parents worked-3pl much for I to-be-able to-study
    ‘My parents worked hard for me to be able to study.’

Notice that the preposition licenses but does not Case-mark the subordinate subject (contrary to the claims of Suñer 1986), as shown by its nominative Case. This is due to the well-motivated assumption that prepositions in Spanish, unlike in English, only assign oblique Case to arguments for which they are subcategorized (cf. Kayne 1981). Thus there is no Case conflict of the type discussed for the English ECM construction in (39).
The proposal presented here also correctly predicts the appearance of lexical subjects in the inflected infinitive of European Portuguese, as reported in Raposo (1987):

(42) a. Será difícil eles aprovarem a proposta.
   will-be-3s difficult they-nom to-approve-3p the proposal
   'It will be difficult for them to approve the proposal.'

b. *Será difícil eles aprovar a proposta.
   will be difficult they-nom to-approve the proposal

In (42), the infinitival verb bears morphological agreement for person and number. Said agreement morphology serves to identify the subject, as per (36b). Since the agreement morphology provides a means of identification, lexical government is not necessary, as the extraposed subject in (42) demonstrates.

Lastly, recall that PRO is not subject to (36). It is confined to positions where it can escape government, as consistent with Binding Theory, and, moreover, that it may not be coindexed with agreement:

(43)\[\text{IP} \quad \text{PRO} \quad \text{I} \quad \text{INFL} \quad \text{V^n} \quad t_i \quad \text{VP} \ldots\]

In English and Caribbean Spanish D2, PRO in SpecI is Case-marked, but is not licensed in that position. In Standard Spanish, PRO receives Case in SpecV^n, but raises to SpecI to escape the lexical government imposed by the lexical INFL. This means that in Standard Spanish, as in English and Caribbean Spanish, PRO must appear only as the preverbal subject of an infinitive.\(^\text{17}\)

\(^\text{17}\) In Dominican Spanish D2, preverbal subjects of infinitives are not restricted to contexts in which they are preceded by a preposition. Consider, by way of example, the nominative subjects of the infinitival constructions shown in (i).

(i) a. Es mejor uno casarse joven.
   is-3s better one to-marry young
   'It is better to marry young.'

b. El te comer mucho te hace daño.
   the you to-eat much you-acc. makes harm
   'Your eating too much is harmful to you.'
5 Conclusions

In this paper, we proposed that government and binding are the structural configurations which subserve the licensing of lexical arguments with respect to Theta Theory and Case Theory. Devoting most of our attention to Case Theory, we have demonstrated that the Case Filter makes reference to structural Case, which designates these purely configurational relationships. The choice between these configurations is dependent on the nature of the Case-assigning head. In particular, we have shown that lexical heads assign Case under government, while non-lexical heads assign Case under Specifier-head agreement. In addition, we have argued that infinitival INFL assigns structural Case, and that PRO may be a recipient of this Case, as motivated by considerations of visibility.

We have observed that English and Spanish differ with respect to the configurations under which nominative Case-assignment proceeds. Adopting the framework of Koopman and Sportiche (1988), we have assumed that subjects are base-generated within the projection of the verb and that Universal Grammar makes available two mechanisms for Case-assignment, government and agreement. We have related the former option to the above-mentioned observation that lexical and non-lexical heads differ with respect to the configuration under which they assign Case, concluding that nominative Case-assignment under government is possible only when INFL is lexical. INFL may be characterized as lexical.

c. No hay donde uno tener las vacas.
   neg there-be-3s where one to-have the cows
   ‘There’s no place to have cows.’

The particular interest of these constructions lies in the fact that the subjects are apparently ungoverned, as shown by the Standard Spanish counterparts in (ii) where a PRO is permitted:

(ii) a. Es mejor PRO casarse joven

   b. El PRO comer mucho te hace daño

   c. No hay donde PRO tener las vacas

And yet in Dominican Spanish D2, the nominative Case is spelled out, for reasons unexplained by our account. One possible explanation is that this dialect manifests some abstract morphological agreement which would license the lexical subject. In this sense, these data would resemble that observed in European Portuguese, discussed above. The Dominican dialect would differ from the Portuguese in having an abstract instantiation of the requisite morphological agreement.
or non-lexical since it is a functional head with verbal properties. The patterns of Case-assignment observed allow us to conclude that INFL in Standard Spanish is lexical, whereas in English it is not. Thus for example, the lexical INFL of Standard Spanish makes available the VS(O) pattern in which the subject is assigned nominative Case in situ (in Spec\(V^0\)) under government, whereas the non-lexical INFL of English must assign nominative Case only in the Specifier-head configuration.

We invoked this divergence in the nature of INFL to account for a variety of word order differences between Standard Spanish and Caribbean Spanish, noting that the latter dialect is in the process of change and that the character of its INFL may be dual. This view of the changing nature of INFL is congruous with the proposals concerning syntactic change espoused in, e.g., Roberts (1991). The non-lexical INFL of Caribbean Spanish D2 renders the language amenable to a configurational analysis along the lines discussed for English: SpecI is the only position to which nominative Case is assigned. We believe that the convergence of the data from fixed word order patterns in declaratives constructions, operator movement constructions and infinitival clauses provide strong evidence that Caribbean Spanish is in the process of syntactic change.

Lastly, we have shown that whereas all NPs are subject to the Case Filter, lexical NPs are subject to another licensing condition which requires that they be lexically-governed or coindexed with agreement. Such a condition finds strong evidence in its ability to explain the distribution of lexical NPs in infinitival constructions.

References


Kroch, A. 1989. ‘Reflexes of grammar in patterns of language change.’ Language Variation and Change 1, 199-244.


Morales, A. 1989. ‘Hacia un universal sintáctico del español del caribe: El orden SVO.’ Anuario de lingüística hispánica 5, 139-152.


Sportiche, D. 1990. ‘Movement, agreement, and case.’ Unpublished manuscript, University of California, Los Angeles.


The Position of Quantifiers in Old English Nominals

Deborah Yeager
Cornell University

1. Old English Nominals

Old English (OE) nominals lacked the fixed word order of their Modern English (MnE) counterparts. Demonstratives, possessives (pronominal and otherwise), quantifiers, and the head noun could appear in a variety of positions relative to each other:

(1) a. sume his geferan
    some his companions

b. his geferan sume
   his companions some
   ‘some companions of his’

(2) a. his þone halgan naman
      his that holy name

b. þæm his naman
   that his name
   ‘that (holy) name of his’

This variation in word order is not reducible to scrambling or flat phrase structure since not all of the logically possible orders are attested. In this paper I propose a hierarchical structure of the Old English noun phrase that, in conjunction with movement constraints found in Rizzi (1990), yields not only the existing constituent orders, but also motivation for the non-occurrence of the unattested word orders.

In this first section, I present the problem that I will be examining. Section 2 includes theoretical assumptions and my proposed analysis in

* I would like to thank two anonymous reviewers for their helpful remarks. Thanks also to Wayne Harbert and John Bowers for comments when this paper was submitted as a paper for admission to candidacy in Sept. 1990.

1 Many examples are taken from Heltveit’s (1977) study of OE in the period prior to 1200. General statements of behavior are drawn from Heltveit’s data and the statistics therefrom.
two parts. The first section (§ 2.1) covers structure; the second (§ 2.2) is concerned with movement. Section 3 discusses alternative analyses and possible problems with both my analysis and alternative analyses. The final section explores implications of the proposal in two ways: it (1) offers an analysis of Modern English quantifiers; and (2) explores some of the theoretical ramifications of the proposal.

1.1. Nominal Constituents

The possible constituents in an OE nominal included a head noun (N³), adjectives (Adj), possessives (Poss), demonstratives (Dm), quantifiers (Q) and numerals. Old English lacked true articles (Heltveit (1977)). Adjectives always appeared immediately preceding the head noun. The behavior of numerals was identical with that of quantifiers. In this paper, I concern myself primarily with the three nominal constituents that vary most in position with regards to each other. These are the demonstratives, pronominal possessives, and quantifiers.

1.1.1. A note on quantifiers

Old English quantifiers could be followed either by a noun in the same case as the quantifier, a noun in the genitive (i.e. partitive) case, or the preposition of followed by a noun in the dative case. Heltveit (1977) labels the first construction, where both noun and quantifier are in the same case, the "concatenative construction".

\begin{align*}
(3) \hspace{1cm}
\text{a. concatenative} \\
\hspace{1cm} \text{sume his men} \\
\hspace{1cm} \text{NAPl  NAPl}^3 \\
\hspace{1cm} \text{‘some men of his’}
\end{align*}

\begin{align*}
\text{b. partitive} \\
\hspace{1cm} \text{sume his manna} \\
\hspace{1cm} \text{NAPl  Gpl} \\
\hspace{1cm} \text{‘some of his men’}
\end{align*}

\hspace{1cm} \text{periphrastic partitive}

\begin{align*}
\text{sume of his mannum} \\
\text{NAPl  Dpl} \\
\text{‘some of his men’}
\end{align*}

\hspace{1cm} \text{periphrastic partitive}

---

2 In Late West Saxon texts (11th century) this is no longer true. During the transition to Early Middle English, the numerals are found directly before adjectives, with no variation in position. Cf. Pillsbury (1967).

3 I follow standard convention with abbreviations. N for Nominative; A, accusative; D, dative; G, genitive; pl, plural; and sg, singular. ‘NA’ indicates that the example could be either Nominative or Accusative. The form is ambiguous.
In this paper, references to quantifiers are exclusively to those in the concatenative construction. In some cases, I have used a MnE partitive to translate what is distinctly not an OE partitive construction. Although the concatenative example in (3a) can be rendered ‘some men of his’, not all constructions allow this method of translating. Thus, in an effort to include all the information in the OE phrase, I have occasionally chosen to use a partitive translation, i.e. ‘some of his men’, where the Old English author or translator has chosen not to use one.

1.2. Attested Orders

Old English allowed six distinct combinations of the three elements: Q, Poss, Dm. The demonstrative and possessive can occur prenominally either as Dm + Poss or Poss + Dm:

(4)  
<table>
<thead>
<tr>
<th></th>
<th>Dm + Poss + N</th>
<th>Dm + Poss + (Adj +) N</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>se ure feond</td>
<td>se heora halga biseop</td>
</tr>
<tr>
<td></td>
<td>the our enemy</td>
<td>the their holy bishop</td>
</tr>
<tr>
<td></td>
<td>‘the enemy of ours’</td>
<td>‘their holy bishop’</td>
</tr>
</tbody>
</table>

(5)  
<table>
<thead>
<tr>
<th></th>
<th>Poss + Dm + ( Adj + ) N</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>min se gecorena sunu</td>
</tr>
<tr>
<td></td>
<td>my the chosen son</td>
</tr>
<tr>
<td></td>
<td>‘the chosen son of mine’</td>
</tr>
</tbody>
</table>

Either the possessive or the demonstrative can appear with a preceding quantifier:

(6)  
<table>
<thead>
<tr>
<th></th>
<th>Q + Poss + N</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>sumum his mannum</td>
</tr>
<tr>
<td></td>
<td>some his men</td>
</tr>
<tr>
<td></td>
<td>‘to some men of his’</td>
</tr>
</tbody>
</table>

(7)  
<table>
<thead>
<tr>
<th></th>
<th>Q + Dm + N</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>sume pa scipu</td>
</tr>
<tr>
<td></td>
<td>some the ships</td>
</tr>
<tr>
<td></td>
<td>‘those some ships’</td>
</tr>
</tbody>
</table>

The quantifier can also appear after the head noun, either with a demonstrative or a possessive:

(8)  
<table>
<thead>
<tr>
<th></th>
<th>Poss + N + Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>hira scipu sumu</td>
</tr>
<tr>
<td></td>
<td>their ships some</td>
</tr>
<tr>
<td></td>
<td>‘some ships belonging to them’</td>
</tr>
</tbody>
</table>
(9) \[ \text{Dm} + N + Q \]

a. \(\text{	extipa{pa cerpan sume}}\)
   \begin{itemize}
   \item those champions some
   \end{itemize}
   \begin{itemize}
   \item ‘some (indicated) champions’
   \end{itemize}
   b. \(\text{	extipa{pa awerigedan gastas sume}}\)
   \begin{itemize}
   \item the accursed spirits some
   \end{itemize}
   \begin{itemize}
   \item ‘some of the accursed spirits’
   \end{itemize}

I have exclusively used \textit{sume} as \textit{Q} in examples (6–9) to show that any given position is not restricted to a certain set of quantifiers. The choice to use \textit{sume} rather than another quantifier was dictated purely by the high frequency of that quantifier, giving a wider range of attestations to choose as examples. Any quantifier can appear in these constructions. Pairs such as (6b) and (8b) \(= (1a, b)\) suggest that the choice of position was stylistic. Subsequent examples will employ a variety of quantifiers.

The examples above give all the attested combinations of two of the three elements. Any of the \textit{Q, Dm, or Poss} elements can appear alone with the head noun, or the noun can appear without any of these. I have only two examples with all three constituents, both with \textit{ealle} ‘all’ and an adjectival head noun.\(^4\)

(10) a. \(\text{ealle his \textipa{pa gecorenan}}\)
   \begin{itemize}
   \item all his those chosen
   \end{itemize}
   \begin{itemize}
   \item ‘all the chosen of his’
   \end{itemize}
   b. \(\text{ealle mine \textipa{pa inneran}}\)
   \begin{itemize}
   \item all my those inner
   \end{itemize}
   \begin{itemize}
   \item ‘all those (spiritual things) within me’
   \end{itemize}

To summarize the examples above, we find the three nominal constituents \textit{Q, Poss, and Dm} appearing with the head noun in the following configurations:

\[ \begin{align*}
\textit{Q + Poss + N} & \quad \textit{Poss + N + Q} & \quad \textit{Poss + Dm + N} \\
\textit{Q + Dm + N} & \quad \textit{Dm + N + Q} & \quad \textit{Dm + Poss + N} 
\end{align*} \]

These six combinations represent only a third of the logically possible permutations. Orderings such as \textit{Dm + Q + N} or \textit{Poss + Q + N} are not attested. In the data, the quantifier always occurs outside of all other

\[^{4}\text{Usually in the case where an author or translator wished to use all three, a partitive construction was used. Q + (Poss + Dm + N) gen, Q + of + (Poss + Dm + N) dat. The example below illustrates the latter technique.}\]

i. \(\text{ænigne of Godes \textipa{ðam halgum}}\)  \quad \text{(Blickling Homilies)}
   \begin{itemize}
   \item any-A of God’s the-Dpl holy-Dpl
   \end{itemize}
   \begin{itemize}
   \item ‘any of the holy ones of God’
   \end{itemize}
elements. Q is either initial or final, never medial. The other eight non-occurrences are instances of either the demonstrative or the pronominal possessive in post-nominal position.\footnote{Outside of Heltveis, it is possible to find examples of postnominal possessives. (Examples are given starting with (36) in \textsection 3.1.1.) Postnominal position was preferred for full phrasal possessives co-occurring with other pronominal constituents. At this juncture, I will, however, refer to Heltveit's data and pronominal (or proper noun) possessives, assuming that the pronoun indicates the more basic position, the postnominal possessive indicating an extraposition of some sort. I will return to this problem in \textsection 3.1.1.} Nominals with final demonstratives do not exist. Pronominal possessives are found in final position only in texts such as Beowulf, which is poetical and “full of archaisms” (Klaeber (1950: 305xvii)). Thus orders such as Q + N + Dm / Poss do not exist.

If we were to posit a flat internal structure for the noun phrase or allow scrambling of the prenominal elements (cf. German “inner field” as in Wedelhuth (1989)), there would be no way to derive the absence of word orders such as Poss/Dm + Q + N. A hierarchical structure is necessary to capture the restrictions on ordering.

2. Proposal

To derive the multiplicity of attested constituent orders and account for non-attested constituent orders requires both a hierarchical structure and subsequent movement of elements. In \textsection 2.1, I will present the structural framework I am operating in and the data leading to my proposal for structure. In \textsection 2.2, I use movement constraints elaborated there to show that movement can derive the attested word orders that structure alone can not.

2.1. Structure

Although structure alone can not yield the occurrences and non-occurrences of nominal constituent order in Old English, a basic structure is necessary from which movement can then take place.

2.1.1. DP hypothesis

In 1987, in order to capture observations concerning gerundive constructions, Abney (among others) proposed that nominal structure parallels sentential structure. For example, Hungarian, Turkish etc. show morphology on the gerund agreeing with the genitive “subject” either identical with or clearly related to that shown on the verb agreeing with
the nominative subject. Thus he proposed a determiner phrase that was analogous to the inflectional phrase in a sentence, taking the noun phrase as its complement. The possessive is assumed to be in the specifier position of this DP, a position to which genitive case is assigned. The determiner is considered its head.

(11) 
```
     +---+       +---+       +---+       +---+
     |   |       |   |       |   |       |   |
     | IP |       | IP |       | DP |       | DP |
     |    |       |  I' |       |    |       |    |
     |  DP|       |    |       |  DP|       |    |
     |    |       |  I° |       |    |       |    |
     |    |       |  Infl |      |    |       |    |
     |    |       |    |       |  D' |       |    |
     |    |       |  D° |       |    |       |    |
     |    |       |    |       |  Det |       |    |
     |    |       |    |       |    |       |    |
     |    |       |  NP |       |    |       |    |
```

In subsequent work, various other categories have been proposed as part of the nominal structure. Some linguists (e.g. Lamontagne and Travis (1987)) maintain DP analogous to IP and propose a higher CP-analogue (Kase Phrase) as in (12b). Other proposals have taken DP to be analogous to CP rather than IP, adding another phrase as IP analog between DP and NP (e.g. Mallén's (1988) Nominal Intermediate Phrase as in (12c), or Tang's (1990) KP).

(12) a.  
```
     +---+       +---+       +---+       +---+
     |   |       |   |       |   |       |   |
     | CP |       | IP |       | IP |       | KP |
     |    |       |    |       |  V° |       |    |
     |  C° |       | I° |       |    |       | K° |
     |    |       |    |       |    |       |    |
     |    |       |  VP |       |    |       |    |
```

b.  
```
     +---+       +---+       +---+       +---+
     |   |       |   |       |   |       |   |
     | KP |       | DP |       | DP |       | NP |
     |    |       |  D° |       |    |       |  N° |
     |  K° |       |    |       |    |       |    |
     |    |       |    |       |    |       |    |
     |    |       |  NP |       |    |       |    |
```

c.  
```
     +---+       +---+       +---+       +---+
     |   |       |   |       |   |       |   |
     | CP |       | IP |       | IP |       | NIP |
     |    |       |  D° |       |    |       | NI° |
     |  C° |       | I° |       |    |       |    |
     |    |       |  VP |       |    |       |    |
     |    |       |  V° |       |    |       |    |
     |    |       |    |       |    |       |    |
     |    |       |  NP |       |    |       |    |
     |    |       |    |       |    |       |    |
     |    |       |  NP |       |    |       |    |
```

Bowers (1989) maintains DP as an IP analog, but also has a phrase between DP and IP parallel to his verbal Predicate Phrase, giving four levels of structure both in nominals and sentences. Carstens (1991) and Ritter (1990) give strong support for the level immediately above NP as #P or Number Phrase.
I am starting from the assumption that DP is indeed analogous to IP, and that there is strong nominal-sentential parallelism. This follows Abney's (1987) original proposal, and fits with the majority of later elaborations.

2.1.2. Proposed structure

One of the more striking generalizations about the behavior of OE nominals is that the quantifier is always found in the outermost position, either initially (examples (14) and (15)) or finally (examples (16) and (17)).

(14) \[ Q + \text{Poss} + N \]
   a. manega his learning-\text{cnihtas}
   many his learning-servants
   'many of his students'
   b. aelcum his cempum
   each his champions
   'each of his champions'

(15) \[ Q + \text{Dm} + N \]
   a. swiðe feawe pa ðeawas
   very few the virtues
   'very few of the virtues'
   b. on ænigre þissere gelicynesse
   in any this parable
   'in any one of these parables'

(16) \[ \text{Poss} + N + Q \]
   hiera þegn an
   their attendant one
   'their one (and only) attendant'

(17) \[ \text{Dm} + N + Q \]
   pa hæþenan manega
   the heathen many
   'the many heathen'

Heltveit counts 21 out of 98 (21%) of his examples of the concatenative construction as being Q final. However, observation of the text of the examples shows that most of what he counts as final position are actually instances of quantifier stranding. The quantifier, although appearing after the noun, is actually separated from the noun and other nominal elements
by other elements of the sentence; i.e. it is stranded. This suggests that final position is not the base position for the quantifier.

(18) a. swa his yldran beforan him manega væron
    as his elders before him many were cf. (16)
    'as many of his ancestors were before him'

b. Da teð hie brohton sume þæm cyninge
   the teeth they brought some the king cf. (17)
   'they brought some of the teeth to the king'

Assuming that the position of the possessive is in Spec D and the demonstrative is in D°, the quantifier must be in a higher position hierarchically in order to always be outside of the possessive/demonstrative. I propose that the quantifier is head of this higher phrase. Thus, there would be a higher phrase QP that takes DP as its canonical complement. The quantifier would be the head of QP.

QP behaves as a functional phrase analogous to CP. Like CP it lacks a regular specifier element, but the specifier position is available for movement.

OE was a V-final language with obligatory movement of the conjugated verb to a medial C° in main clauses (van Kemenade (1987)). I° was arguably medial also (Friedman (1989)). Given a nominal-sentential parallelism, Q° and D° would appear medially, and N° finally.

The structure above predicts the following orders, including the instances of all three elements.

---

6 Other possible positions of the possessive are discussed in § 3.1.
(20)   \textbf{Q + Poss + N} \hfill (14b) repeated, c.f. (6), (14a)
\begin{align*}
&\text{ælcum his cempum} \\
&\text{each his champions} \\
&\text{‘each of his champions’}
\end{align*}

(21)   \textbf{Q + Dm + N} \hfill (15b) repeated, c.f. (7), (15a)
\begin{align*}
&\text{on } \textit{enigre} \textit{pissere gelicynesse} \\
&\text{in any this parable} \\
&\text{‘in any one of these parables’}
\end{align*}

(22)   \textbf{Poss + Dm + (adj) + N} \hfill c.f. (2a), (5)
\begin{align*}
&\text{his } \textit{pa} \textit{haligan sawle} \\
&\text{his that holy soul} \\
&\text{‘his holy soul’}
\end{align*}

(23)   \textbf{Q + Poss + Dm + N (adj)} \hfill (10b) repeated
\begin{align*}
&\text{ealle mine } \textit{pa} \textit{inneran} \\
&\text{all my those inner} \\
&\text{‘all those (spiritual things) within me’}
\end{align*}

The other attested orders, \text{Dm + Poss + N} in (4) and the quantifier in final position in (8), (9), (16), (17), remain to be accounted for. The structure proposed above accounts for only half of the six possible constructions. The other three must be obtained by the movement of constituents.

2.2. Movement

Movement is constrained by the need for the trace to be governed. Among the various formulations of this constraint, I have tried to use a fairly restrictive form, a conjunctive rather than a disjunctive formulation of the Empty Category Principle.

2.2.1. ECP and Relativized Minimality

The principle guiding the government of traces is the Empty Category Principle (ECP), which consists of two clauses:

(24)   \textbf{Empty Category Principle} \hfill \textsuperscript{7}
\begin{enumerate}
\item A non-pronominal empty category must be
\begin{enumerate}
\item lexically governed or
\item antecedent governed
\end{enumerate}
\end{enumerate}

\textsuperscript{7} Chomsky (1981) as quoted in Rizzi (1989), Ch. 1, p. 10.
Lexical government means essentially sisterhood with (or being contained within an XP that is sister to) a lexical item (or AGR). Antecedent government is a locality requirement that the movement not proceed too far in any single step. (See Huang (1990) ch. 6 for discussion of the classic ECP.) Recent proposals suggest that traces must be both lexically and antecedent governed, a conjunctive rather than disjunctive ECP. (See Rizzi (1989) ch. 2.) The two requirements can be characterized as licensing (=lexical government) and identification (=antecedent government).


ECPIII: a non-pronominal empty category must be
i. properly head governed. (formal licensing)
ii. antecedent governed or θ-governed\(^8\) (identification)

"Proper" head government entails government by an \(X^o\) within \(X'\). θ-government allows a θ-assigner to govern a sister to which it assigns a θ-role. Both proper head government and antecedent government disallow an intervening maximal category (XP) which can act as a barrier (cf. Chomsky (1986)) between governor and trace. In addition, there can be no potential governor of the type appropriate to govern the trace between the trace and its governor (Rizzi’s (1989) Relativized Minimality). (For formal statements, see § 3.2.)

### 2.2.2. Movement of elements

As previously stated, the constituent orders \(Q + Dm + N\), \(Q + Poss + N\) and \(Poss + Dm + N\) follow straightforwardly from the structure proposed in (19), repeated below as (26).

(26)

\[
\text{QP} \\
\quad \text{Spec Q} \\
\quad \quad Q' \\
\quad \quad Q^o \\
\quad \quad \text{Spec D} \\
\quad \quad \quad D' \\
\quad \quad \quad DP \\
\quad \quad Poss \\
\quad \quad \quad D^o \\
\quad \quad \quad Spec N \\
\quad \quad \quad N' \\
\quad \quad \quad N^o \\
\quad \quad \quad \text{Noun}
\]

\(^8\) Rizzi (1989) expresses reservations about the disjunctive inclusion of θ-government.
Poss + Dm order follows from the proposed structure. Dm + Poss order is derivable in a simple manner. It is already necessary to posit that Old English allowed head movement in order to derive V-2 word order. Head movement of D° into Q°, analogous to I° to C°, would result in Dm + Poss order. This movement could not take place if a quantifier were present.

(27) a. 

\[
\begin{array}{c}
\text{Spec } Q \\
\rhd Q' \\
\rhd Q^o \\
\rhd e \\
\rhd \text{DP} \\
\rhd \text{Spec } D \\
\rhd \text{Poss} \\
\rhd D^o \\
\rhd \text{DM} \\
\rhd \text{NP}
\end{array}
\]

b. 

\[
\begin{array}{c}
\text{Spec } Q \\
\rhd Q' \\
\rhd Q^o \\
\rhd D^o \\
\rhd \text{DM} \\
\rhd \text{NP}
\end{array}
\]

This would derive (2b), repeated as (28a) from a hypothetical (28b).

(28) a. \([Q^o [\text{pæm}]_2] [Q^o [\text{ hãu } t]_3 \text{nanan}]\) 

b. \([Q^o [\text{ hãu } t]_3 \text{nanan}]\)

Within the context of a main clause, the specifier of CP is used as a landing site for topicalization. Assuming a parallel function for Spec Q provides a natural landing site for topicalization within the nominal. If the entire DP moved to Spec Q, the quantifier would be left in final position, yielding a structure as in (29a) from the one in (29b). Optionally, the DP could move further, as in (29c). From its position in Spec Q, the DP could move to an adjunction position (scrambling within the sentence) or the sentential topic position, Spec C. Stranding, like topicalization and scrambling, would be motivated by pragmatic factors such as focus.

(29) a. 

\[
\begin{array}{c}
\text{Q} \\
\rhd e \\
\rhd Q^o \\
\rhd \text{DP}
\end{array}
\]

b. 

\[
\begin{array}{c}
\text{Q} \\
\rhd \text{DP} \\
\rhd Q^o \\
\rhd t
\end{array}
\]

c. 

\[
\begin{array}{c}
\text{Q} \\
\rhd \text{DP} \\
\rhd Q^o \\
\rhd t
\end{array}
\]

This analysis exploits the realization that the quantifiers' appearance in final position was part of a more general process of quantifier stranding. Examples (16) and (17), repeated below as (30a) and (30b), exemplify the first type of movement, (29b). (18b), repeated as (31) is an example of the DP raised to topic position, leaving a stranded quantifier.
(30)  
\[ \text{QP} \rightarrow \text{DP} \rightarrow \text{Q}^\circ \]
\[ \text{QP} \rightarrow \text{DP} \rightarrow \text{Q}^\circ \rightarrow \text{t} \]

a. \[ [\text{QP} \ [\text{DP} \ \text{hiera} \ \text{pegn}] \ [\text{Q}^\circ \ \text{t}]] \]
their attendant one
‘their one (and only) attendant’

b. \[ [\text{QP} \ [\text{DP} \ \text{pa} \ \text{heþenan}] \ [\text{Q}^\circ \ \text{manega} \ \text{t}]] \]
the heathen many
‘the many heathen’

(31) \[ [\text{CP} \ [\text{DP} \ \text{pa} \ \text{teþ}]] \ \text{hie brohton} \ [\text{QP} \ \text{t} \ [\text{Q}^\circ \ \text{sume} \ \text{t}]] \ \text{þæm cyninge} \]
the teeth they brought some the-Dat king
‘they brought some of the teeth to the king’

The trace in the position of complement of Q° would be licensed by Q° and identified by the DP in Spec Q. In the case of further movement, the trace in Spec Q would be identified by DP in its final landing site and licensed by whatever element selected the nominal initially. In (31), this would be the verb bringan ‘to bring’.

Thus the conjunction of a simple structure and movement rules accounts for the attested orders in a straightforward fashion. In the following section, I discuss other possible analyses of the positional data (§ 3.1) and further explore the movement rules which can be used to exclude the unattested orders (§ 3.2).

3. Alternative Analyses

In the preceding sections, I have presented my assumptions as the simplest and most straightforward account of OE quantifier behaviour. In this section, I will attempt to justify that claim. Although each assumption can be questioned individually, as a whole they are interrelated. Changing any one assumption can require a change in all the others. Ultimately, all other possibilities lead to a single alternate proposal.

In § 3.1, I will offer counterproposals to the assumptions I have made earlier in the paper regarding position. In each case, the counterproposal will lead either to false predictions or to a single alternate analysis. In § 3.2 I will examine other movement possibilities along the lines of those I have already proposed. I will then suggest why these extensions will not work and why the major alternate analysis is also to be rejected. In § 3.3 I will briefly mention two other nominal elements that are interesting in their interaction with Poss, Dm, and Q in terms of position, but deserve a more thorough treatment than I can give them here.
3.1. Positions of Poss, Dm, Q

I have proposed three distinct positions for the three elements I am considering: Poss in Spec D, Dm in D° and Q in Q°. That all three do occur together, albeit rarely, justifies the assumption that they are three distinct elements in three distinct positions. This leaves open the question of what those three positions are.

3.1.1. Possessive pronoun in Spec D

I have suggested that the base order for the elements of the nominal is Poss + Dm + N. Presumably this initial position would apply to full as well as pronominal possessives. Examples of full possessives can be found in all the positions that the pronominal shows as in the examples below.

(32)    Poss + N
    a.    mannes hus
          man's house
          'the/a man's house'
    b.    brimlipendra ærænde
          sea-travelling ones' errand
          'sailors' message'

(33)    Poss + Dm + (Adj) + N
    a.    ealra hiora væstma þone fiftan dæl
          all-G their fruits that fifth part
          'the fifth part (one fifth) of all their crop'
    b.    Godes dæt hefonlice wuldir
          God's that heavenly glory
          'that heavenly glory of God's'

(34)    Dm + Poss + N
    a.    þone ilcan sæs earm
          the-A same sea's arm
          'the arm of (the) same sea'
    b.    se mannes sunu
          the-N man's son
          'the son of the/a man'

\[9\] This could be 'the same arm of (the) sea'. The form of \textit{ilca} is ambiguous.
(35) \(Q + \text{Poss} + N\)
    on anum \(\text{pæs cyninges}\) tune
    in one the-G king’s villages (or residences)
    ‘in one village of the king’s’

There are also instances of demonstrative (or quantifier) plus full possessive which show the possessive following the head noun, a position that the pronominal form does not appear in.

(36) \(Dm + N + \text{Poss}\)
    a. \(\text{ðone cwīde \(\text{ðæs apostoles Paules}\)}\)
        the saying the-G apostle-G Paul-G
        ‘the word of the apostle Paul’
    b. of \(\text{Þam slepe \(\text{ure synna}\)}\)
        of the death our-G sins-G
        ‘of the death of our sins’

In early sources such as Beowulf (ca. 700\(^{10}\)), both pronominal and full possessives can appear on either side of the noun.

(37) (pronominal)
    a. wine \(\text{min}\)
        friend my
        ‘my friend’
    b. \(\text{min wine}\)
        my friend

(38) (proper name)
    a. \(\text{frea ðæs Scyldinga}\)
        lord of (the) Scyldings
    b. \(\text{Grendles heafod}\)
        Grendel’s head

(39) (full phrase)
    a. \(\text{æpelinges bearn}\)
        lord’s child
        ‘a lord’s son’
    b. \(\text{ac só hand gebarn // \(\text{modiges mannes}\)}\) (In. 2697)
        but the hand burned brave-Gen man-Gen
        ‘but the hand of the brave man burned’

\(^{10}\) Klaeber (p. cvii) puts the date of the poem as “not earlier than, say, the second half of the 7th century” but no later than the end of the 8th. The manuscript dates from about 1000 A.D.
Arguably, since (apart from Beowulf) full possessives and pronominal forms behave differently, they may not represent the same position. This type of analysis has been done on Modern German.

Like Old English, Modern German has both pre- and postnominal possessives. However, pronominal (and proper name) possessives are required to appear prenominally, and full possessives to appear postnominally.

(40) a. sein Haus
    his house
    cf (37)

   b. Gerts Haus
      Gert's house
       cf (38)

   c. das Haus des Mannes
      the house the-G man-G
      'the man's house'
       cf (39)

This asymmetry has been accounted for in the proposal that pronominal forms are *D*° rather than Spec D elements (Webelhuth (p.c.)). One of the most compelling arguments for this proposal is that, dialectally, Spec D and *D*° can be filled simultaneously. This type of co-occurrence gives strong indication that the pronominal possessive in Modern German is a *D*° element.\(^\text{11}\)

(41) a. dem Mann sein Vater
    the-D man his father

   for standard

   b. der Vater des Mannes
      the father the-G man-G
      'the man’s father'

(41) would be analysed as the following:

\(^{11}\) Olsen (1989) maintains that the entire *dem Mann sein* complex is in Spec D. She argues *sein* to be Spec D based on the fact that it is an element in argument structure. D° contains the inflectional elements which appear on *sein*. 
In the archaic/poetic style of Beowulf, there seems to be a preference for the type of asymmetry observed in Modern German. Harbert (1976) finds that the majority of pronominal possesives in Beowulf are pronominal, while the majority of full possessives are postnominal. Outside of Beowulf, pronominal forms appear pronominally only, as in Modern German. However, in later texts even full possessives appear predominantly pronominally. Below are examples from prose (Laws of King Alfred) and poetry (Battle of Maldon), both showing pronominal possessive DP’s.

(43) a. cyninges þegn
    king’s thane
    ‘the kings servant’

    Alfred’s Laws, also (32a)

b. wicinga ar
    vikings’ messenger

    Battle of Maldon, also (32b)

The parallelism with Modern German does not hold up. At its height, in the earlier stages of recorded Old English, the asymmetry was only a tendency,12 which was itself lost in later periods. The final position of possessives, rather than indicating a different base position, is possibly an instance of the full form being moved, presumably through extraposition. Since Old English regularly shows extraposition in sentences (Bean (1982), van Kemenade (1987)), it is not unreasonable to find it also in nominals. The preference in texts such as Beowulf for a pronominal pronominal and a postnominal full possessive would be motivated by topic-comment considerations. A full possessive is making a comment (who owns it, partakes of it, etc.) about the topic (the head noun). A pronoun is referring to old information and therefore comes earlier in the topic-comment ordering.

Given that the Old English word orders are not fixed like the German, and the asymmetry between pronominal and full possessives can be accounted for by a process (i.e., extraposition) already in the language,

---

12 The pronominal ~ full possessive asymmetry was likewise only a tendency in German up until about 1700. The fixing of position did not take place until early modern (ENHG) German (Ebert (1982)).
the assumption of identical base position for full and pronominal possessives seems valid.

If full and pronominal possessives appear in the same position, that position must allow phrasal elements, since full possessives are DP's. The head position, $D^o$, is not an option for a phrasal element such as a full phrase possessive. Specifier and adjunct positions allow phrasal elements, but case is not assigned to adjunct positions (except, perhaps, locative cases). The position for possessives must also be assigned case, since all nominals must receive case. Thus, possessives must be in a specifier position in order to receive case.

The other possible analysis is harder to refute and serves as the basis for any coherent alternate proposal. Possessives, both pronominal and full, originate in the same position, but that position is not Spec D. The chief alternative would be Spec #, as in Carstens (1991) for pronominal possessives only (Spec N in Tang (1990)). If this were subsequently shown to be the case (contrary to Abney (1987), Fukui (1986), etc.), the effect on my analysis of position would be negligible. $Dm + Poss + N$ would be the base order (where the possessive can receive case in situ), and $Poss + Dm + N$ the derived order by movement from Spec N to Spec D. However, I have reasons for preferring the hypothesis that the possessive is in Spec D rather than Spec N. These will become clear in the discussion of movement (§ 3.2.1).

3.1.2. Demonstrative as $D^o$

The DP hypothesis makes reference to 'determiners' as the head of DP. Old English lacked true determiners, having only the demonstrative. Although in modern English, demonstratives pattern in position like determiners (Radford (1988)), this is not the case in all languages. For example, in head-final Japanese (Huang(p.c.)), demonstratives precede the noun, and therefore can not be assumed to be in $D^o$, which follows the noun. I have placed the OE demonstrative in the $D^o$ slot.

If the demonstrative is not a head, it must either be a specifier or an adjectival element. I have justified above the assumption that possessive elements are in the specifier position. If that is true, the demonstrative can not also be a specifier. Assuming Poss in Spec D and Dm in Spec N gives the $Poss + Dm + N$ order, but there is no way to derive $Dm + Poss + N$. If the demonstrative moved to Spec Q, the trace left behind would be ungoverned. The Poss in Spec D would block antecedent government

---

13 Demonstratives function unlike determiners in their pronominal use.

I like these/those        * I like the
(Rizzi (1989), (1990), see § 2.2). Assuming Poss in Spec N and Dm in Spec D encounters the same problem. The demonstrative can not be a specifier.

If the demonstrative were an adjunct\textsuperscript{14}, it would be a D' level adjective. An N' level adjective would not be ordered with respect to true adjectives, but the demonstrative always precedes adjectives.

\[(44) \quad \text{Poss} + \text{Dm} + \text{Adj} + \text{N} \]
\[\begin{array}{l}
\text{ure se ytmesta dæg} \\
\text{our the utmost day} \\
\text{‘our last day’}
\end{array}\]

In order to derive Dm + Poss + N, the possessive would have to originate in Spec N. Poss + Dm + N would then represent the raising of the possessive to Spec D. Unfortunately, this leaves an improperly governed trace in Spec N. The trace of the possessive in Spec N is antecedent governed, but it is not properly head governed. There is no element in D\textsuperscript{o} to govern the trace. Abney (1987) suggests that with genitive case assignment, there is a type of Agr in D\textsuperscript{o}. This might serve, as does Agr in I\textsuperscript{o}, as a proper governor.

The only alternative to Dm as D\textsuperscript{o} is as a D' adjunct, with Poss in Spec N and a properly governing Agr in D\textsuperscript{o}. This option rests on the proposal that Poss originates in Spec N.

3.1.3. Q\textsuperscript{o} with DP complement

Within X-bar theory, all lexical items project a phrase. Thus the existence of a QP is not the issue, merely whether QP is identical with some other phrase (i.e. are quantifiers actually D\textsuperscript{o} elements or A\textsuperscript{o} elements) and, if not, whether the position it occupies is that of a superjacent phrase.

Given the positions that I have argued for above, (Dm in D\textsuperscript{o}, Poss in Spec D) quantifiers can not be D\textsuperscript{o} elements, since they appear when D\textsuperscript{o} is already filled with a demonstrative.\textsuperscript{15}

\textsuperscript{14} By adjunct, I mean X' level, as with adjectives and adverbs. XP level adjunction occurs only as the result of movement.

\textsuperscript{15} If Dm were a D' element, this would leave the D\textsuperscript{o} position open for Q, but that would give a completely wrong order of elements, i.e. Poss + Dm + Q + N.
(45) \[ Q + Dm + N \]  \[ \text{swiðe feawe pa ðeawas} \]
\[ \text{very few the virtues} \]
\[ \text{‘very few of the virtues’} \]

Likewise, QP is not a specifier of D, since it co-occurs with possessives.

(46) \[ Q + \text{Poss} + N \]  \[ \text{manega his lerning-cnihtas} \]
\[ \text{many his learning-servants} \]
\[ \text{‘many of his students’} \]

The most likely alternative would be that QP is a D' level modifier, which can appear either to the left or to the right, giving both initial and final word orders. However, such an assumption would make false predictions. It would predict that the possessive could occur outside of the quantifier. As the specifier position is higher than any single bar adjunction, we would expect Poss + Q order, the specifier of D followed by modifier of D. Base generation of the possessive in Spec N would only account for the possibility of Q Poss order, not the complete absence of Poss + Q.

As another implication of the ability of a modifier to appear either in initial or final position, we would not expect there to be a clear preference of one position over the other. In Heltveit’s data, three-quarters of his examples were Q-initial.

To derive the external position of QP, it is most reasonable to assume QP is in a hierarchically superior position. Again, QP could be the specifier, modifier, or full instantiation (i.e. Q\(^{o}\) as the head) of a higher phrase which takes DP as its complement. My reasons for choosing the last is the lack of phrasal behavior on the part of the quantifiers. Both specifier and modifier positions are XP positions, but the quantifier behaves more like a head. There are not phrasal counterparts to the usual class of one-word quantifiers as pronominal possessives have with genitive noun phrases. Whereas the movement of quantifiers would suggest phrasal nature, it seems that it is not the quantifier that has moved but rather the DP that moves.

3.2. Movement possibilities

In § 2.2 I discussed how movement rules allow for the multiple orderings of elements. Now it is necessary to exclude movement that yields unattested orders. At this point, I would like to give Rizzi’s (1990)
full definitions of head (i.e. lexical) government and antecedent government:

(47) Head government: \[ \text{Rizzi (1989: 13)} \]
\[ X \text{ head governs } Y \text{ iff} \]
\[ \text{i. } X \in \{A, N, P, V, \text{ Agr, T}\} \]
\[ \text{ii. } X \text{ m-commands } Y \]
\[ \text{iii. no barrier intervenes} \]
\[ \text{iv. relativized minimality is observed} \]

(48) Antecedent government: \[ \text{Rizzi (1989: 13)} \]
\[ X \text{ antecedent governs } Y \text{ iff} \]
\[ \text{i. } X \text{ and } Y \text{ are co-indexed} \]
\[ \text{ii. } X \text{ c-commands } Y \]
\[ \text{iii. no barrier intervenes} \]
\[ \text{iv. relativized minimality is observed} \]

(49) Proper head government: \[ \text{Rizzi (1989: 60)} \]
\[ \text{governed by } X^\circ \text{ within } X' \]

3.2.1. Head to head movement

In § 2.2.2, I used head to head movement to derive Dm + Poss word order from an underlying Poss + Dm order. Dm moved form D^o to Q^o. The problem then arises as to why the noun can not do likewise. We would expect to find evidence of head movement of N^o to D^o or Q^o analogous to movement of the verb from V^o to I^o to C^o. N + Poss order might even seem to argue for this type of movement. However, if the noun were regularly able to move, we would also expect to find many instances of N + Adj. This is not the case. N^o always\(^{16}\) appears after the adjectives dependent on it. The N^o can not move up and leave a properly governed trace.

There are two possible reasons for failure of proper government: either head government is blocked, or antecedent government is. If antecedent government is blocked, then it must be because NP is a barrier; all other conditions in (48) are met. Head government (47) can be blocked either by NP acting as a barrier, or by the inability of Agr in D^o to act as a proper governor. Thus, although D^o elements exhibit head movement into Q^o, N^o does not.

This result is not unlike behavior in Modern English sentences. Modern English allows movement of I^o elements (modals, pleonastics,

\(^{16}\) Wülffing (1894) does note some examples of adjective in final position. They are very few and all in Bede, i.e. texts translated from the Latin.
auxiliaries) into C°, but not V° elements into I° (with the exception of auxiliary verbs). I am suggesting that, similarly, in Old English D° moves to Q° but N° can not move to D°.

This is my primary motivation for the rejection of Spec N as a possible site for Poss. Either reason for the failure of government of the trace in N° — NP as a barrier, or the inability of D° elements to act as a governor — is sufficient to block government of a trace in Spec N.

3.2.2. Movement to a specifier position

I utilize the specifier position of QP as a landing site for the topicalization of the DP within the nominal. Presumably, other elements within the nominal can then topicalize to that position; none do. Other elements leave improperly governed traces.

The movement of NP to Spec Q would violate Relativized Minimality, since the Spec D would be a closer potential governor. In addition, any phrase that is not the complement of a lexical X° (or Infl) constitutes a barrier (Chomsky (1986)). Thus NP is a barrier, and so is DP. The specifier of DP, Poss, can not raise to Spec Q.

Spec D is also not utilized as a landing site. NP is a barrier to anything within NP raising to Spec D. The NP itself can not raise to Spec D, analogous to DP raising to Spec Q. The NP already has case, and Spec D is a case-assigning position. Such a movement is blocked by the Case Filter.

Thus there is no movement to specifier position other than that of the DP to Spec Q.

3.2.3. Head Movement Constraint

Given that DP is a barrier to movement, D° should not be able to move out of DP to QP. In this case, I appeal to an observation made before Barriers, the head movement constraint (HMC) (Travis (1984)). The HMC observes that the only element that can fill an empty head position is the head of that position’s complement. Thus if XP is the complement of Y°, then only X° (or something moved through X°) can move into the empty Y° position. D° is the head of the complement of Q° and thus can move.

Appealing to the HMC as a more accurate observation of head movement than Barriers and Relativized Minimality then suggests that N° should not be blocked by the barrier nature of NP. Unfortunately, the absolute lack of movement out of NP remains a stipulation.

---

17 Yafei Li (1991 MIT Dissertation) distinguishes X° and XP licensing conditions, which might provide a more principled explanation for the allowability of D° movement than appealing to the descriptive HMC.
3.2.4. Weighing the alternatives

There are two basic alternatives, both of which show inconsistency between head and specifier extraction out of a particular phrase: (1) out of NP: Poss can move from Spec N to Spec D, but the noun can not move from N° to D°; or (2) out of DP: Dm can move from D° to Q°, but Poss can not move from Spec D to Spec Q and NP is absolutely impassable. I have chosen the latter to justify. My reasons appear above: I believe head to head movement is less restrictive than specifier movement, i.e., subject to the HMC which says nothing about barriers of proper government, merely head-complement relations. However, if there exists a good account regarding why Modern English can move Spec V but not V° out of VP, then the same could be said to apply to this OE NP, in which case this can be restated, without too much alteration, as Poss originates in Spec N.

3.3. Other elements

There are two other elements that are relevant in their interaction with Poss, Dm and Q. These are adjectives and pronouns.

3.3.1. Adjectives

In noun phrases containing both Poss and Dm, the presence or absence of adjectives has a profound effect. With an adjective or adjectival noun (e.g. heathen, beloved, etc.) the constituent order is almost always Poss + Dm + Adj + N. It is extremely difficult to find examples of Poss + Dm that do not have adjectives. (No examples appear in this paper.) There are occasional instances of Dm + Poss + Adj, but these are rare.

(50) \[ \text{Dm + Poss + Adj + N} \]

\( \hat{p}a \) his ealdan wrencas
those his old tricks
‘those old tricks of his’

There is a possible explanation for this observation. In the absence of a quantifier, there is a very strong preference for the D° element to move to Q°. This yields Dm + Poss order (see (27)). There is an element that can counteract this preference, namely the close relationship between the demonstrative and the adjective. In Old English, the form of the adjective depends on the presence or absence of the demonstrative. Quantifiers do not have the same effect, and possessives do only occasionally.\(^{18}\) Thus

---

\(^{18}\) This constitutes another argument for neither Poss nor Q’s being D° elements. In Modern German, where pronominal possessives are D° elements, they do have the same effect on adjective endings as the
there is a countering preference for the demonstrative to remain in $D^0$. Examples such as (50), above, show the preference for a filled $Q^0$ (as $C^0$ was always filled) overriding the adjective's influence. In the absence of the adjective, however, $Dm$ would always move.

3.3.2. Pronouns

Although there is a strong preference for the quantifier to precede the DP when DP is filled by a full phrase, when there is only a pronoun, the quantifier usually follows the pronoun. In Heltveit (1977), 52 out of 84 examples (61%) showed the quantifier in final position as in MnE *we three, you all* etc.

(51)  
\begin{align*}
\text{Pron + } Q & \quad Q + \text{Pron} \\
\text{a.} & \quad \text{hie sume they some 'some of them'} \\
\text{b.} & \quad \text{we manega we many} \\
\text{c.} & \quad \text{sume hie some they}
\end{align*}

I have no account for this at this point, but it seems to follow the general trend of pronominal elements preceding and phrasal elements following their heads in Old English. This has already been mentioned in connection with genitives. Objects of prepositions followed the same tendency (Harbert (1989)). Even subjects of sentences did. There are many seeming violations of V-2 in Old English where a pronominal subject precedes the verb despite the topicalization of some other element (see (18b)). With a full DP, the inversion always took place.

4. Further Considerations

The proposal explored in § 2 and § 3 has interesting ramifications for both an analysis of Modern English quantifiers (§ 4.1) and also for a number of theoretical considerations (§ 4.2).

4.1. MnE Quantifiers

Modern English quantifiers do not show the unified behavior of the Old English words from which they are descended. MnE quantifiers fall into different groups which show different behavior. In one case, however, it seems that Modern English has preserved the Old English model.

indefinite article. MnG quantifiers act either like adjectives or like possessives in terms of their effect.
4.1.1. MnE Determiners

Modern English determiners can be divided into three syntactic types (Quirk (1985)): (1) quantifiers such as all and both; (2) the definite article and possessives; and (3) quantifiers such as few, many, several, numbers etc. They can co-occur in exactly the order given (cf. 52-54), and co-occurrence is disallowed within each type (cf. 55).

(52) a. all my friends
    * my all friends

    b. all the friends
    * the all friends

(53) a. my few friends
    * few my friends

    b. the many friends
    * many the friends

(54) all three friends
    * three all friends

(55) a. * all both friends
    b. * my the friends
    c. * many three friends

Semantic considerations obviously play a role in co-occurrence phenomena. Co-occurrence of many and few in the same nominal makes little sense. But semantics can not be the only source of co-occurrence constraints, since (56) was perfectly good in Old English:

(56) þa mine freond
    * the my friends

The MnE positional restraints were simply not present in Old English. Old English also lacked completely the constructions exemplified by MnE few type determiners; even quantifiers meaning few and many appeared outside of the possessive and demonstrative, giving exactly opposite grammaticality judgements for (53).

(57) feawe mine freonda
    * mine feawa freonda
    * few my friends
    my few friends

With these differences, it might appear that Old English quantifiers are completely unlike Modern English ones. However, the type of MnE
quantifiers exemplified by *all, both, and each* behaves in a similar fashion to their OE counterparts.

4.1.2. The quantifiers *all, both, each*

Old English quantifiers precede all other elements including the possessive and the demonstrative. They appear after the noun phrase, but still adjacent to it. They can be stranded when the rest of the nominal phrase moves. In addition, this characteristic behavior is not limited to subject nominals, but any nominal that moves can show such results.

Modern English allows very similar results:

(58) a. *all* the men have coughed
   *both* my friends have arrived

b. the men *all* have coughed
   *my friends* *both* have arrived

c. the men have *all* coughed
   *my friends* have *both* arrived

(58a) shows usual word order. (58b) shows evidence of the quantifier in postposition, moved with the subject as a whole. (58c) exemplifies a stranded quantifier. Assuming that the subject starts out inside the VP (Koopman and Sportiche (1988), Fukui (1986)) and then must raise to Spec I, (58c) illustrates the quantifier left in the base generated position of the subject. Raising verbs, passive and small clause constructions reinforce the evidence found with subjects of unergative (*cough*) and unaccusative (*arrive*) verbs.

(59) Raising
   a. *All* the men seem to be crazy
   b. *The men* *all* seem to be crazy
   c. *The men* seem *all* to be crazy

(60) Passive
   a. *All* the patients were seen by a doctor
   b. *The patients* *all* were seen by a doctor
   c. *The men* were *all* seen by a doctor

(61) Small clause
   a. Karen considers *all* the men crazy
   b. Karen considers the men *all* crazy

Therefore, it would seem reasonable to extend the OE analysis of QP to Modern English; *all, both*, and *each* being MnE Q° elements. (Other
MnE quantifiers such as *few and many are not Q° elements. Such an analysis is not far from work on quantifier float as stranding by Sportiche (1988) (see § 4.2.2). However, there are instances where the behavior of all etc. differs from that of the OE quantifiers.

As (62) shows, direct objects and objects of prepositions do not allow the quantifier in postposition.

(62) a. Karl bought all the books.
    * Karl bought the books all.

b. Gert gave doughnuts to all his students
    * Gert gave doughnuts to his students all.

There seems to be a constraint on the position of Q relative to its affiliated DP. Postposition arises only as a result of movement to an adjacent position, not movement within the QP. Sportiche (1988) finds a prohibition against quantifiers in French following the subject directly (pre-Infl). In Modern English, I find the same; (58b) is extremely awkward (others disagree). This suggests a prohibition against simple postposition, except as the result of movement of the DP to a co-incidentally adjacent landing site, as in the small clause example in (61).19 Where no movement takes place, as with objects of verbs and prepositions, the quantifier can not show up after the DP. Subjects of sentences, small clauses, raising and passive verbs do allow movement and so we find the quantifier in a stranded position (which may be adjacent to the raised element).

Here lies the crucial difference between the OE constructions and the MnE constructions with both and all. I believe this is indicative of the loss of Spec Q as a landing site for topicalization. The loss is not surprising, since we have also lost Spec C as a landing site for topicalization. Modern English topicalizes by adjunction to IP20 (Travis (1987)), where Old

19 I assume Bowers’ (1991) analysis of small clauses.

20 This claim is not undisputed. Baltin (1982) argues that topicalization must be IP (S) adjunction, since it can follow complementizers or other CP (COMP) elements.

(i)  a. He’s a man to whom liberty, we could never grant
    b. It’s obvious that Mary, he can’t stand
       (Baltin (1982:17), examples (69) and (70))

Some have argued that topicalization involves movement to CP. Authier (1992) posits a recursive CP, citing topicalization of elements that trigger V2 which occurs in embedded contexts. V2 is usually an indication of raising to CP, as in German. He proposes that even topics which do not
English topicalized by movement to Spec C. Since DP does not allow
adjunction (Bowers (1987)), there is no equivalent to IP adjunction.
Topicalization to Spec C is followed by verb movement to C°, giving the
characteristic V-2 word order that Modern English lacks, except with
"affective" elements such as never, or rarely. As Modern English still uses
Spec C as the landing site for topicalization of affective elements, it may be
that Spec Q is still available as a landing site for topicalization in certain
dialects, those which find (58b) good.

I would argue from this evidence that the QP analysis still holds for
Modern English as for Old English. The major differences are two:
(1) there are fewer Q° elements extant in Modern English, and (2) Spec Q
no longer functions as a landing site for topicalization. This leaves
unanswered the question of how a unified treatment of all quantifiers in
Old English evolved into the diverse system we have in Modern English
today.

4.2. Theoretical Implications

Although this is an analysis of a somewhat obscure corner of
linguistics (Old English), it has far ranging theoretical implications. The
proposal set out here obviously has relevance to the DP hypothesis and
the recent extensions thereof. In addition, there are implications for the
theories of movement brought together in Relativized Minimality. Finally,
it yields conceptual support of Sportiche's (1988) stranded quantifiers and
suggests how such a theory can be usefully employed in other situations.

4.2.1. DP hypothesis

The ramifications for recent extensions of the DP hypothesis are
fairly straightforward. The existence of a maximal phrase above DP is
clear. There are at least three levels of maximal phrase articulation in the
nominal, including one above the node in which demonstratives/
determiners and genitive case assignment are situated. I have assigned a

trigger inversion are CPs since embedded contexts which prohibit the V2
type (iia) also prohibit the other type (iib). A plain IP (iic) is acceptable.

(ii)  a. * the fact that [CP never has Mary liked Bill ]
       b. * the fact that [CP ?, IP? Bill, Mary has never liked ]
       c. the fact that [IP Mary has never liked Bill ]

Lasnik and Saito (1992) argue for both, a topic position above CP (labelled
TP) which is the site of left dislocated topics, and one adjoined to IP, the
landing site for topicalization. I have chosen to follow the proposal that
topicalization is adjunction to IP.
label of QP to this topmost phrase, for the quantifiers which I believe act as head. Past and subsequent analyses may point to lower levels of structure, i.e. between DP and NP, but there must still exist at least one maximal phrase above DP.

4.2.2. Floating Quantifiers

Sportiche (1988) analyzes floating quantifiers as left by the NP^ in its movement in the sentence. The quantifier can only appear in a position through which the nominal has moved. With the loss of Spec Q as a landing site in Modern English, what I have proposed amounts to the same surface results, although our structures underneath differ vastly. The difference in approaches would come out in an examination of languages which allow the quantifier to follow the nominal. If in every case, the language was a scrambling language (i.e. the nominal scrambled to a position adjacent to the one occupied by its stranded quantifier), that would evidence strong support for Sportiche's view. If, alternatively, postpositional quantifiers were found in positions where there was no adjacent position to scramble to (e.g. subject position, object of preposition), that would give strong support to stranding via Spec Q.

Under either account, the most interesting part of the stranding analysis is the possibility of its use as a test for movement. Thus Larson's (1988) and Bowers' (1991) analyses of double object constructions as result of movement would receive support.

(63) a. Renée gave all the men a mental competency exam.
    b. Renée gave [the men]_i [all t_i] a mental competency exam.

Curiously enough, such a test suggests interesting questions about passives. For example, he quantifier can not sit after the participial verb:

(64) (60) a-c repeated
    a. All the patients were seen by a doctor
    b. The patients all were seen by a doctor
    c. The men were all seen by a doctor
    d. *The patients were seen all by a doctor

Bowers (1991) in particular uses this sort of positioning as evidence of movement. A test of this sort for movement can be extremely useful in much of today's theory where most elements are proposed to have moved at some stage of the derivation.
Conclusion

This paper has attempted to provide an account for the behavior of Old English quantifiers and the multiple orderings of constituents within the OE nominal phrase. I have proposed a structure based on an extension of the DP hypothesis, giving an additional phrase above DP, analogous to CP.

(65) (19) repeated

With the proposed structure, movement processes such as head-to-head movement, QP internal topicalization, and stranding of quantifiers accounted for all the attested orders. Employing the movement constraints of the Empty Category Principle as found in Rizzi (1989), I derived motivation for the non-occurrence of the constituent orders that are not attested. Observations on position and stranding offered an explanation for the behavior of one class of MnE quantifiers as the descendent of the OE quantifiers. The stranding behavior of this one class of quantifiers can be used as a test for movement.

References


Bean, Marion. 1983. The Development of Word Order Patterns in Old English. Croom Helm; London.


Wülfing, Ernst. 1894. Die Syntax in den Werken Alfrdes des Grossen. P. Hanstein’s Verlag; Bonn.

Dictionaries / Glossary

Cassidy and Ringler. 1971. (as above)

Old English Sources

Abbreviations from Heltveit (1977) and Wülfing (1894):

Ælf Hom: The Homilies of the Anglo-Saxon Church (2 vols.).
Be: Bede.
Beo: Beowulf.
Blick: The Blickling Homilies.
Chr: The Anglo-Saxon Chronicle (A and E).
Cp: Cura Pastoralis.
Hom: Old English Homilies and Homeletic Treaties (2 vols.).
Le: Leges Alfredi Regis.
Maldon: The Battle of Maldon.
Oros: King Alfred’s Orosius.
Past: King Alfred’s West Saxon Version of Gregory’s Pastoral Care
Ps: Psalter.
Saints: Ælfric’s Lives of Saints (2 vols.).
So: Soliloqueys.

<table>
<thead>
<tr>
<th>example #</th>
<th>OE source</th>
<th>quoted in</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Ælf Hom I 560.14</td>
<td>Heltveit</td>
</tr>
<tr>
<td></td>
<td>Saints II XXIX 162</td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td>Blick 89.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blick 167.32</td>
<td></td>
</tr>
<tr>
<td>(4)</td>
<td>Oros 300.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blick 201.24</td>
<td></td>
</tr>
<tr>
<td>(5)</td>
<td>Gosp. Matt. 3.17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oros 270.26</td>
<td></td>
</tr>
<tr>
<td>(6)</td>
<td>Saints I VII 385</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ælf Hom I 560.14</td>
<td></td>
</tr>
<tr>
<td>(7)</td>
<td>Chr E 1052</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chr E 1085</td>
<td></td>
</tr>
<tr>
<td>(8)</td>
<td>Chr A 895</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Saints II XXIX 162</td>
<td></td>
</tr>
<tr>
<td>(9)</td>
<td>Hom II 500.28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ælf Hom II 350.32</td>
<td></td>
</tr>
<tr>
<td>(10)</td>
<td>Blick 85.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blick 89.1</td>
<td></td>
</tr>
<tr>
<td>(14)</td>
<td>Gosp. John 6.66</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Saints II XXXI 97</td>
<td></td>
</tr>
<tr>
<td>(15)</td>
<td>Past 4.7</td>
<td></td>
</tr>
<tr>
<td>example #</td>
<td>OE source</td>
<td>quoted in</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>(15) b</td>
<td>Ælf Hom I 474.19</td>
<td></td>
</tr>
<tr>
<td>(16)</td>
<td>Chr 465</td>
<td></td>
</tr>
<tr>
<td>(17)</td>
<td>Saints II XXXIV 275</td>
<td></td>
</tr>
<tr>
<td>(18) a</td>
<td>Saints I XXIII 412</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b Oros 18.1</td>
<td>(also Bright)</td>
</tr>
<tr>
<td>(20)=(14)b</td>
<td>Saints II XXXI 97</td>
<td></td>
</tr>
<tr>
<td>(21)=(15)b</td>
<td>Ælf Hom I 474.19</td>
<td></td>
</tr>
<tr>
<td>(22)</td>
<td>Chr E 1012</td>
<td></td>
</tr>
<tr>
<td>(23)=(10)b</td>
<td>Blick 89.1</td>
<td></td>
</tr>
<tr>
<td>(28) a=(5)b</td>
<td>Oros 270.26</td>
<td></td>
</tr>
<tr>
<td>(30) a=(16)</td>
<td>Chr 465</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b (17) Saints II XXXIV 275</td>
<td></td>
</tr>
<tr>
<td>(31)=(18)b</td>
<td>Oros 18.1</td>
<td></td>
</tr>
<tr>
<td>(32) a</td>
<td>Le 60.25</td>
<td>Wülfing</td>
</tr>
<tr>
<td></td>
<td>b Maldon 26</td>
<td>Bright</td>
</tr>
<tr>
<td>(33) a</td>
<td>Oros 1.12</td>
<td>Wülfing</td>
</tr>
<tr>
<td></td>
<td>b Cp (=Past) 160.17</td>
<td></td>
</tr>
<tr>
<td>(34) a</td>
<td>Oros 16.28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b Ps 8.5</td>
<td></td>
</tr>
<tr>
<td>(35)</td>
<td>Be 543.20</td>
<td></td>
</tr>
<tr>
<td>(36) a</td>
<td>Cp (=Past) 52.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b So 166.9</td>
<td></td>
</tr>
<tr>
<td>(37) a</td>
<td>Beo 1704</td>
<td>Harbert</td>
</tr>
<tr>
<td></td>
<td>b Beo 2047</td>
<td></td>
</tr>
<tr>
<td>(38) a</td>
<td>Beo 500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b Beo 1648</td>
<td></td>
</tr>
<tr>
<td>(39) a</td>
<td>Beo 888</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b Beo 2697</td>
<td></td>
</tr>
<tr>
<td>(43) a</td>
<td>Le 106.3</td>
<td>Wülfing</td>
</tr>
<tr>
<td></td>
<td>b Maldon 25</td>
<td>Bright</td>
</tr>
<tr>
<td>(44)</td>
<td>Blick 101.34</td>
<td>Heltveit</td>
</tr>
<tr>
<td>(45)=(15)a</td>
<td>Past 4.7</td>
<td></td>
</tr>
<tr>
<td>(46)=(14)a</td>
<td>Gosp. John 6.66</td>
<td></td>
</tr>
<tr>
<td>(50)</td>
<td>Chr E 1003</td>
<td></td>
</tr>
<tr>
<td>(51) a</td>
<td>Ælf Hom I 346.34</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b Ælf Hom II 126.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c Ælf Hom I 212.21</td>
<td></td>
</tr>
</tbody>
</table>
Multilingualism in Tunisia and French/Arabic Code Switching among Educated Tunisian Bilinguals

Hedi M. Belazi, Ph.D.
Cornell University 1991

The Tunisian speech community is characterized by both diglossia and bilingualism. The existence of these two sociolinguistic phenomena has led to the emergence of intermediate codes, Educated Tunisian Arabic and Franco-Arabe, a mixture of French and Tunisian Arabic.

The focus of this thesis is Franco-Arabe, used mainly by educated Tunisian bilinguals. It is an exemplar of code switching, i.e. the constant rapid alternation between two languages in the same unit of discourse. This phenomenon, common in multilingual settings, has important implications for sociolinguistics and linguistics. Since not only are the functions served by switching from one code to another related to questions of prestige, social status, language attitudes and topic, but far from being a random operation, code switching is governed by strict syntactic constraints determining where a speaker may or may not switch from one language to another. However, few studies have been done on code switching between French and Arabic despite its extensive use among educated French-Arabic bilinguals and its important consequences on language maintenance, language change and language policy. The approach in this study was two pronged, utilizing both an extensive field corpus and tests such as Matched Guise and judgement tasks. This thesis shows that, apart from the diglossic relationship between MSA and TA, the functional roles played by French and Arabic in the community, and the values Tunisians attach to each one correlate well with their actual usage of code switching. It also demonstrates that code switching is rule-governed and can be accounted for in a principled manner, avoiding ad-hoc rules and taxonomic accounts. Making use of the distinction between functional and lexical categories made by Abney (1987), Fukui (1987) and Bowers (1989), two general principles are posited to account for the grammar of code switching among Tunisian bilinguals:

(1) The Functional Head Constraint states that functional heads F-select complements of the same language. This dependency restricts switching between a Functional Head, such as C°, D°, NEG° and Q° and their complements IP, NP, VP and NP.
(2) The Word Language Integrity Constraint states that any lexical item is subject to the principles of the grammar of the language from which it is drawn.

We argue that these two principles, which account for both the data collected and the elicitation of judgements of a variety of test sentences from twenty educated Tunisian bilinguals, go further in accounting for the grammar of code switching than the principles given so far in the literature.

Ordering information

Trade paperback copies of Hedi M. Belazi's dissertation are available. The price is $13.00 for students, $15.00 for non-students. To order a copy, write to:

DMLL Publications
Morrill Hall
Cornell University
Ithaca, NY 14853
USA

There is a shipping charge of $2.00 for the first book, $1.00 for each additional. Please add $1.00 to the total shipping charge for orders to be shipped outside North America. Checks must be in U.S. funds drawn on a U.S. bank. Orders are shipped via surface mail, so allow 4-6 weeks for delivery. International delivery may take longer.

DMLL Publications now publishes current Cornell dissertations in linguistics, the Proceedings of the Eastern States Conference on Linguistics (ESCOL), the Cornell Working Papers in Linguistics, and the Working Papers of the Cornell Phonetics Laboratory. Send inquiries to the address above, or to books@plab.dmll.cornell.edu.
The Second Language Acquisition of Functional Categories: Complementizer Phrases in English and Japanese

Tamar Ilana Kaplan, Ph.D.
Cornell University 1993

It has been argued (Radford, 1990; Guilfoyle and Noonan, 1990) that functional categories are acquired through a process of biological maturation, rather than an input-based system. This predicts that the L1 acquisition of functional categories will differ significantly from adult L2 acquisition, because in the latter, biological maturation will have already taken place. A “weak” version of maturation would predict no parallels between early L1 acquisition and adult L2 acquisition for matured elements of grammar. Under a “strong” version of maturation, we would also expect no parallels, but we would additionally predict that while matured elements of grammar would be fully present in all stages of adult L2 acquisition, there would be difficulty learning language-specific variation among functional categories because this would have been learned in a non-parametric way in L1 acquisition. This dissertation investigates these hypotheses through a study of native English speakers acquiring Complementizer Phrases (CP) in Japanese as a Second Language.

A longitudinal study of native English speakers in a full-year intensive Japanese program was conducted, using both grammaticality judgement tasks and elicited imitation tasks; one questionnaire was given every two weeks, alternating between the two types of questionnaires. The results from this study show that, with respect to the acquisition of CP (and, by analogy, other functional categories), the L1 acquisition of functional categories cannot be maturational, but must be input-based. First, there are parallels in nominal modification structures between early L1 and adult L2 acquisition. In addition, of the structures which the subjects were experiencing difficulty with, at least one involved a structure which is exactly parallel to English — the presence of a +wh element in C₀ in an embedded clause; and, of the structures which the subjects did not experience difficulty with, at least one involved a structure which is not found in English — the sequence [C, +wh] [C, -wh] in an iterated CP structure. These results are not consistent with the results we would expect if functional categories were acquired maturationally, under either a weak or a strong version of the theory.
Ordering information

Trade paperback copies of Tamar Ilana Kaplan’s dissertation are available. The price is $13.00 for students, $15.00 for non-students. To order a copy, write to:

DMLL Publications
Morrill Hall
Cornell University
Ithaca, NY 14853
USA

There is a shipping charge of $2.00 for the first book, $1.00 for each additional. Please add $1.00 to the total shipping charge for orders to be shipped outside North America. Checks must be in U.S. funds drawn on a U.S. bank. Orders are shipped via surface mail, so allow 4-6 weeks for delivery. International delivery may take longer.

DMLL Publications now publishes current Cornell dissertations in linguistics, the Proceedings of the Eastern States Conference on Linguistics (ESCOL), the Cornell Working Papers in Linguistics, and the Working Papers of the Cornell Phonetics Laboratory. Send inquiries to the address above, or to books@plab.dmll.cornell.edu.
The Internal Structure of Determiner Phrases

Enrique Mallén, Ph.D.
Cornell University 1989

Following the assumption that the thematic (θ-) matrix of VERBs and their corresponding derived NOUNs are linked to syntactic θ-positions in basically the same fashion, we predict that the θ-structure of both L-Heads should be identical in the unmarked cases (Configurational Hypothesis). I offer additional evidence in support of this hypothesis by examining the correlations in the mechanisms of Case and θ-role assignment at the sentential and nominal levels, with particular emphasis on Spanish. The facts analyzed demonstrate that the θ-structure of deverbal NOUNs patterns essentially with that of VERBs, revealing a parallel hierarchical distribution of arguments within sentences and noun phrases.

In addition, and to accommodate quantifiers and possessors to the structure of noun phrases, I argue for the existence of an independently required functional (F-) nominal projection QP, whose Head is optionally filled by quantifiers (whence QUAN) and whose specifier is the base-generated position of possessors.

Phrasal projections of QUAN are dominated by the F-Head DET, filled by determiners/demonstratives. In turn, QUAN dominates the lexical (L-) projections of the NOUN. Thus, no distinction remains in the structural configuration of sentential and nominal constructions. In both instances, two F-Heads (COMP/INFL, DET/QUAN) potentially dominate an L-Xmax (VP, NP).

In Spanish, QUAN assigns Case rightwards, allowing the external argument to receive Case without raising to [Spec,QP]. The unoccupied Spec position can then be taken by other θ-arguments, or non-θ-arguments such as the possessor. We show that the directionality of Case and θ-role assignment determines the contrast in the linear distribution of nominal arguments between Spanish and English.

The core of the thesis analyzes cases of movement inside and outside of the noun phrase in Spanish to determine which of the nominal categorial projections constitute barriers to government. DP is found to be an intrinsic barrier, while NP (as VP) and QP (as IP) acquire their status as barriers only by inheritance from a lower BC. Also, a new definition of Minimality barriers is argued for, restricting movement from inside an Xmax to the closest possible specifier position.
Ordering information

Trade paperback copies of Enrique Mallén’s dissertation are available. The price is $16.00 for students, $18.00 for non-students. To order a copy, write to:

DMLL Publications
Morrill Hall
Cornell University
Ithaca, NY 14853
USA

There is a shipping charge of $2.00 for the first book, $1.00 for each additional. Please add $1.00 to the total shipping charge for orders to be shipped outside North America. Checks must be in U.S. funds drawn on a U.S. bank. Orders are shipped via surface mail, so allow 4-6 weeks for delivery. International delivery may take longer.

DMLL Publications now publishes current Cornell dissertations in linguistics, the Proceedings of the Eastern States Conference on Linguistics (ESCOL), the Cornell Working Papers in Linguistics, and the Working Papers of the Cornell Phonetics Laboratory. Send inquiries to the address above, or to books@plab.dmll.cornell.edu.