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1.0 Introduction

This paper will discuss phonetically null (henceforth: empty) wh-interrogatives in Japanese, exemplified in (1b), (2b) and (3b) below:

(1) a. [ Taro-ga kinoo tabe-ta-no-wa ] nani-desu-ka?

Taro-NOM yesterday eat-PAST-COMP-TOP what-copula-Q

“What was it that Taro ate yesterday?”

3Earlier versions of this paper were presented at a colloquium of the University of Durham, England (October, 1996), and at Workshop on Theoretical East Asian Linguistics held at UC, Irvine (November, 1996). I thank the audiences of both occasions for their helpful comments and criticism. I especially thank Joe Emonds (University of Durham) and Jim Huang (UC, Irvine), who provided me with the opportunities to present this paper. I also thank Heles Contreras (University of Washington) and Yasuaki Abe (Nanzan University), who gave me valuable comments and insightful suggestions constantly. All errors are of course my own.

I will use the following abbreviations throughout this paper:

NOM=nominative, ACC=accusative, DAT=dative, GEN=genitive, TOP=topic, REL=relative operator, COMP=complementizer, NEG=negative, PASS=passive, PAST=past, PRES=present, PROG=progressive.

Incidentally, the status of the morpheme -no, which I mark with COMP here, might be controversial. Some may consider it to be a nominalizer, while others may consider it to be a kind of a nominal element that heads a relative clause. As a matter of fact, as Murasugi (1991) points out, there are several kinds of -no in Japanese. See Murasugi (1991) and Hoshi (1995) for some discussion.

Furthermore, it might be somewhat misleading to claim here that this construction involves a phonetically null element. The expression of “phonetically null” is in fact ambiguous in the current theory in the sense that it could mean both an element that lacks the phonetic content from the beginning, like PRO, and an element whose phonological features are deleted at PF after SPELL-OUT. As a matter of fact, I will argue in later sections, assuming a minimalist program, that there is a deletion of the interrogatives at the PF side, which is purely phonological, while their contents at the LF side are not affected at all. In other words, it is my conclusion that this phonological deletion is not controlled by LF condition, thus there is no direct link between LF and PF, as assumed in Chomsky (1993, 1994, 1995).
b. [ Taro-ga kinoo tabe-ta-no-wa ] \( \phi ? \)  


(what)

“(What) was it that Taro ate yesterday?”

(2) a. [ Taro-ga kinoo at-ta-no-wa] dare-desu-ka?  


see-PAST-COMP-TOP

who-copula-Q

“Who was it who Taro saw yesterday?”

b. [ Taro-ga kinoo at-ta-no-wa ] \( \phi ? \)  


(who)

“(Who) was it who Taro saw yesterday?”

(3) a. [ Taro-ga kinoo Hanako-ni at-ta-no-wa ]  


Hanako-DAT
doko-desu-ka?  

where-copula-Q

“Where was it that Taro saw Hanako yesterday?”

b. ?[ Taro-ga kinoo Hanako-ni at-ta-no-wa ] \( \phi ? \)  


(where)

“(Where) was it that Taro saw Hanako yesterday?”

The above (b) sentences all have a gap at the end of the sentences. And

\(^3\)The marginal status of (3b) in its intended reading may come from the fact that there are other possible sources for the sentence. For example, (3b) may be understood as an elliptical sentence of (i):

(i) [ Taro-ga kinoo Hanako-ni at-ta riyuu-wa ]   


nani desu-ka?  

reason-TOP

what

“Why was it that Taro saw Hanako yesterday?”

In other words, if the source of an elliptical sentence is ambiguous, the recoverability of the missing information seems to be greatly affected. In order to license the EWH construction, both recoverability condition and constituency requirement discussed later must be satisfied. See Section 3 for more details.
the gaps in the (b) sentences correspond to *wh*-interrogatives that appear overtly in the (a) sentences respectively. I will refer to the (b) type sentences as the Empty-WH (EWH) construction.

I will show in what follows that although the deletion of *wh*-interrogatives in the EWH construction may look very exotic at first glance, there are no extraordinary rules involved. In fact, some rules that are also found in English, for example, auxiliary deletion and *do*-support (its counterpart in Japanese, to be more precise), would derive the EWH construction, and the structural difference such as head-final vs. head-initial between the two languages makes the difference with respect to the availability of the EWH construction. This paper is organized as follows. Section 2 will show the key characteristics of the EWH construction in Japanese. I will make the discussion as theory independent as possible, devoting myself to clarifying the issues. And in Section 3, I will provide analyses from the perspective of the framework of Minimalist Program (Chomsky 1993, 1994, 1995).

2.1 Some properties of the EWH construction

Postponing the discussion of the status of the gaps for the moment, let us sort out some peculiar properties of the EWH construction. As far as I know, such types of sentences have been hardly discussed in Japanese generative grammar, despite the fact that they are quite pervasive in colloquial Modern Japanese.

But first of all, a caution is needed in discussing this construction because there are similar (but fundamentally different from my perspective) elliptical sentences that seem to be derived by a process that may be discourse-oriented.\(^3\) Take (4) for example.

\(^3\)I am grateful to Yasuaki Abe (personal communication) for pointing out this issue.
As the English translation indicates, the speaker B asks a question based on a sort of parallelism that exists between the two sentences above. Although the question requires an answer that is appropriate for a question with a wh-interrogative, I do not see any reason to hypothesize that (4b) has a covert wh-interrogative syntactically. Let us refer to this type of sentence as the How About construction.4

In what follows, I will ignore the How About construction entirely, based

4The EWH construction and the How About construction may be easily distinguishable in most cases intuitively, but sometimes we find a case in which the source of the sentence is not so obvious as one can imagine. Consider (i) below:

(i) Are,        Hanako-wa?
    well         Hanako-TOP
    “Well, where is Hanako?”

    The form of the sentence (i) suggests that it is the How About construction, not the EWH construction. However, sentence (i) does not require any discourse-oriented parallelism mentioned above. In fact, we can begin a conversation with sentence (i), in a situation that the speaker notices that Hanako is missing, and asks where she is. Given that, I conjecture that (i) is an abbreviated question of (ii), which is an EWH construction corresponding to its full form (iib):
on the assumption that the construction may be well studied in the discourse analysis. And I will also assume that the EWH construction is best studied in formal syntax. The first half of this paper is rather theory-independent, but I will also study the EWH construction from the perspective of the framework of Minimalist Program later in this paper.

Now let us observe some properties of the EWH construction. The first property I want to point out is that the EWH construction is only available in root clauses. Thus, although (5a) is a perfectly well-formed sentence, (6a) is ill-formed. ((6b) is a rough structure of (6a). I use English words for the expository purpose.) What is important here is that if there is no deletion of the wh-interrogative, the sentence is perfectly fine, as (7) indicates:

(5) a. [ Taro-ga Hanako-ni watashi-ta-no-wa ] φ ?
    Taro-NOM Hanako-DAT hand-PAST-COMP-TOP (what)
    "(What) was it that Taro handed to Hanako?"

b. [ Taro-ga Hanako-ni watashi-ta-no-wa ] nani ?
   what
   "What was it that Taro handed to Hanako?"

(ii) a. Are, Hanako-(ga) iru-no-wa φ ?
    Hanako-NOM be-COMP-TOP (where)
    "Well, (where) is Hanako?"

b. Are, Hanako-ga iru-no-wa doko-desu-ka?
    Hanako-GEN be-COMP-TOP where-copula-Q
    "Well, where is Hanako?"

Naoki Fukui (personal communication) pointed out to me that the EWH construction also might be subject to discourse analysis. Although I am not fully convinced that the EWH phenomenon belongs to the realm of discourse, I must emphasize that my major claims of this paper would be still valid even if the EWH turns out to be a discourse phenomenon. Also see the previous footnote for the relevant remark.
(6) a. *[[ Wareware-ga mondai-ni shiteiru-no-wa ]
we-NOM problem-DAT make-COMP-TOP
[[ Taro-ga Hanako-ni watashi-ta-no-wa ] (da) ].
(what) (copula)
"What we are concerned with is (what) it was that Taro handed to Hanako."

b. 

(7) [[ Wareware-ga mondai-ni shiteiru-no-wa ]
what-Q
"What we are concerned with is what it was that Taro handed to Hanako."

The second property of the EWH construction is that the empty wh-interrogatives are not allowed when the copula/auxiliary verb \(-desu\) that is followed by [+Q] morpheme \(-ka\) is present. In other words, the presence of the
empty *wh*-interrogative is dependent upon the auxiliary verb deletion. Consider the following example:

(8)  *Taro-ga  Hanako-ni  watashi-ta-no-wa  φ  
     Taro-NOM  Hanako-DAT  hand-PAST-COMP-TOP  (what)  
     desu-ka?  
     DESU-Q  
     "(What) was it that Taro handed to Hanako?"

Sentence (8) is ruled out because the empty *wh*-interrogative is used despite the fact that -desu-+ka has not been deleted.

The fact itself that empty *wh*-phrases are used may also be considered to be a property of the EWH construction. It is because Japanese does not allow empty *wh*-interrogatives in general, as the contrast in (9) and (10) shows, while Japanese relative operators are all empty, as exemplified in (11):^6

(9)  a.  Taro-wa  nani-o  tabemashi-ta-ka?  
     Taro-TOP  what-ACC  eat-PAST-Q  
     "What did Taro eat?"

b.  *Taro-wa  φ  tabemashi-ta-ka?  
     ((9b) must mean "Did Taro eat something?")

(10) a.  Taro-wa  dare-ni  aimashi-ta-ka?  
     who-DAT  meet-PAST-Q  
     "Who did Taro meet?"

b.  *Taro-wa  φ  aimashi-ta-ka?  
     ((10b) must mean "Did Taro meet somebody?")

^6It is not uncontroversial to claim that Japanese has relative operators. As a matter of fact, several researchers claim that no relative operators are involved in Japanese relative clause formation. See Murasugi (1991) and Hoshi (1995) for some relevant discussion.
(11) a. \([\text{Taro-ga kat-ta } \phi \text{ hon }]\)  
\(\text{buy-PAST REL book}\)  
"the book which Taro bought"

b. \([\text{Hanako-ri sasage-rare-ta } \phi \text{ hon}]\)  
\(\text{Hanako-DAT dedicate-PASS-PAST REL book}\)  
"the book which was dedicated to Hanako"

The fact that (9b) and (10b) can only be yes/no type questions indicates that \textit{wh}-interrogatives in Japanese cannot be empty in order that they are interpreted as \textit{wh}-interrogatives.

The point just made might be interesting if we consider the fact that Japanese allows zero pronouns, as exemplified in (12) (indicated as \textit{pro}).

(12) a. \(\text{Taro-wa } [\text{ Hanako-ga } \text{ pro} \_ \text{ denwasuru } \text{ maeni }]\)  
\(\text{Taro-TOP Hanako-NOM him telephone before}\)  
\(\text{ie-o de-ta. home-ACC leave-PAST}\)  
"Taro left his home before Hanako called him."

b. \(\text{Taro-wa } [\text{ pro, chichioya-o } \text{ nikunde-iru.}]\)  
\(\text{his father-ACC hate-PRES}\)  
"Taro hates his father."

Non-\textit{wh}-pronouns may be empty in Japanese, but \textit{wh}-pronouns may not. This gives a unique characteristic to the EWH construction, in which we do find empty \textit{wh}-phrases.

Incidentally, the unavailability of empty \textit{wh}-interrogatives in sentences like (9b) and (10b) has nothing to do with the fact that \textit{wh}-raising in Japanese is covert. In English, it is true that \textit{wh}-phrases in situ cannot target [+Q] COMP
headed by *if* or *whether* in determining their scope as shown in (13) (cf. Chomsky 1973), but there is no problem in interpreting sentences like (14), with a *wh*-phrase in situ, as *wh*-questions in Japanese.

(13)  **Who wonders if Mary is going to marry who?**

(14)  **Hanako-wa** dare-to kekkonsuru-no-desu-ka?

Hanako-TOP who-with marry-COMP-copula-Q

"Who is Hanako going to marry?"

In (14), the in-situ *wh*-phrase *dare* 'who' must be able to be linked to the [+Q] COMP at LF. And since the sentence (14) is perfectly well-formed, we must conclude that covert linking of *wh*-phrases is a valid operation in Japanese. However, if there were any relationship between EWH and the covert *wh*-linking operation, we would have to conjecture that the covert *wh*-linking operation is somehow sensitive to phonological properties because the covert *wh*-linking is available only to non-empty *wh*-phrases. This seems to be quite odd from the perspective of the current theory. Thus, I conclude that the unavailability of empty *wh*-interrogatives in sentences like (9b) and (10b) has nothing to do with the fact that *wh*-raising in Japanese is covert.

In the following sections, I will show that this peculiar construction is derived in a rather straightforward manner by some interactions of ordinary rules that are also found in English. There are three major factors that are relevant to the derivation of the EWH construction; 1) auxiliary deletion, 2) *desu*-support comparable to *do*-support in English, and 3) word order or the syntactic structure of clauses in Japanese. I will discuss these factors in the
following section.

2.2 Auxiliary Deletion, Desu-Support and the Structure of Clauses

Let us first notice that the auxiliary verb do may be deleted in informal style of English, as discussed by Akmajian et al. (1995: Chapter 7) (see also Kaisse 1985). Thus, (15a) and (15b) can be directly related with each other.

(15)  
   a. Does he like ice cream?
   b. He like ice cream?

As is clear from the fact that the verb like in (15b) lacks the third person singular morpheme -s, (15b) is not a question that has a form of a declarative. In other words, the auxiliary verb do that moved to the [+Q] COMP has been deleted in (15b).

Now let us look at the following Japanese sentences.

(16)  
   a. Taro-wa dare-ga suki desu-ka?
   Taro-TOP who-NOM like DESU-Q
   "Who does Taro like?"

   b. Taro-wa dare-ga suki φ ?

(16a) and (16b) mean the same, despite the fact that (16b) lacks a constituent including the [+Q] morpheme -ka. It is interesting to notice that the morpheme which I indicated as DESU in (16a) is a semantically null auxiliary verb corresponding to do in English in a way. This amounts to saying that Japanese has DESU-support, which is a counterpart of do-support in English.7

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7To say -DESU corresponds to do in English might be somewhat misleading, because the copula -desu is usually translated as be in English. It is not essential here how -DESU is translated in English. The point I’d like to make is that -DESU is a semantically null auxiliary just as English do is.
Now let us assume that [+Q] in both English and Japanese is a bound morpheme in nature, and thus must be attached to an overt element. Let's say this is a phonological requirement. Then, what we observed above in both languages is that semantically empty auxiliary verbs, namely do in English and -desu in Japanese, are attracted to [+Q] overtly. And when they form a constituent at [+Q] COMP, they may be deleted in informal style of the languages. Both languages have exactly the same deletion rule, and the only major difference, except that [+Q] morpheme is overt in Japanese while it is covert in English, is that COMP is placed at the left-peripheral in English, while it is at the right-peripheral in Japanese, which may be derived from the head-parameter.⁸ Although both languages have the same rule, their word order difference brings the subject-auxiliary inversion only to English.

Before I proceed, I must make it clear that the -desu I discussed here is different from another copula/auxiliary verb -da, because it has direct relevance to the first property of the EWH construction that I pointed out in the previous section.

It seems that it is widely believed that -desu is a polite form of -da, and that, except for the difference in politeness, they are essentially the same.

However, a careful consideration will reveal that this has no syntactically significant ground, although it might be true semantically. These two copula/auxiliary verbs might mean the same, but their distributions are quite

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⁸Recent studies of the theory of phrase structure in the Minimalist Program, i.e. Bare Phrase structure theory (Chomsky 1994, 1995; Chapter 4), have obscured the status of the head-parameter of the X-bar theory in the grammar. It appears that the head-parameter, if it really exists, has its place at PF. (But see Saito & Fukui (1996) for an alternative view.) I will not touch upon this delicate issue here, and continue to refer to the parameter in a rather informal way. See Kayne (1994), Saito & Fukui (1996) and Takano (1996) for relevant discussion.
different. For example, -desu may attach to adjectives as in (17a), whereas -da may not, as in (17b):⁹

(17) a. Kanojo-no hitomi-wa utsukushii-desu.
  her-GEN eye-TOP beautiful-DESU
  “Her eyes are beautiful.”

b. *Kanojo-no hitomi-wa utsukushii-da¹⁰
  “Her eyes are beautiful.”

Furthermore, -desu and -da show an interesting contrast with respect to their co-occurrence with [+Q] morpheme -ka. Observe the following:

(18) a. Kinoo at-ta-no-wa dare-desu-ka?
  yesterday meet-PAST-COMP-TOP who-DESU-Q
  “Who was it who you met yesterday?”

b. *Kinoo at-ta-no-wa dare-da-ka?
  “Who was it who you met yesterday?”

The above examples might suggest that -da can not occur with the overt [+Q] morpheme -ka, while -desu can. However, the situation will be reversed if they appear in an embedded clause like (19), (20), and (21):

(19) a. *[ Kinoo at-ta-no-wa dare-desu-ka ] shitte-ru?
  know-PRES
  “Do you know who was who you met yesterday?”

b. [ Kinoo at-ta-no-wa dare-da-ka ] shitte-ru?
  “Do you know who was who you met yesterday?”

⁹This has been pointed out to me by Yasuaki Abe (personal communication).

¹⁰This sentence might be acceptable in some dialects. Also see footnote 12.
   what-NOM what-DESU-Q understand-NEG
   "I don't understand what's going on."

      what-DA-Q
      "I don't understand what's going on."

(21) a. *[Han'nin-wa dare-desu-ka] wakara-nai.
   suspect-TOP who-DESU-Q
   "We don't know who is the suspect."

   b. [Han'nin-wa dare-da-ka] wakara-nai.
      who-DA-Q
      "We don't know who is the suspect."

Therefore, the real generalization must be something like (22):

(22) -Desu can attach to the overt [+Q] morpheme -ka only in matrix clauses,
   whereas -da can attach to -ka only at embedded clauses.¹¹

¹¹If this generalization is correct, when the auxiliary verb is missing as in
(i), the source of the sentence should be (ii), not (iii):

(i) ??Kinoo at-ta-no-wa dare-ka?
    yesterday meet-PAST-COMP-TOP who-Q
    "Who was it who you met yesterday?"

(ii) Kinoo at-ta-no-wa dare-DESU-ka?

(iii) *Kinoo at-ta-no-wa dare-DA-ka?

It must be noted that the sentence (i) is marginal at best, because it does
not conform to the regular deletion rule of DESU, as later discussion will clarify.
Briefly speaking, in question sentences, the [+Q] morpheme -ka must also be
deleted when the copula -desu is deleted.

Also, I must note that both -da and -desu may be used in embedded
declaratives. However, I will not go into any detail of the syntax of -da and -desu
in declaratives in this paper. See Kuno (1978: Chapter 1, Section 7) for some
discussion of -da and -desu from the perspective of functional grammar.
In other words, -desu and -da are in complementary distribution with respect to co-occurrence with the overt [+Q] morpheme -ka. Recall here that the EWH construction is a root phenomenon in the sense of Emonds (1976), as I pointed out in the previous section (the first property of the EWH construction). The generalization (22) gives a straightforward answer to the question of why the EWH construction is not available in embedded contexts like (8), repeated here as (23):

(23)  "[[ Wareware-ga mondai-ni shiteiru-no-wa ]
we-NOM problem-DAT make-COMP-TOP
[if [ Taro-ga Hanako-ni watashi-ta-no-wa ] Φ ] (da )].
Taro-NOM Hanako-DAT hand-PAST-COMP-TOP (what)(copula)
"What we are concerned with is (what) it was that Taro handed to Hanako."

Given (22), -desu can not appear in the clause which has [ Taro-ga Hanako-ni watashi-ta-no-wa ‘What Taro handed Hanako’] as the subject, because it is an embedded context. And what we concluded above with respect to the second property of the EWH construction was that the presence of the empty wh-interrogative is somehow dependent upon the deletion of -desu-ka. Since there is no combination of -desu-ka possible in the embedded context, the empty wh-interrogative is not available, either. Thus there is no embedded EWH construction.

The conclusion we have just reached is descriptively correct. Theoretically, however, there is an alternative analysis. Unfortunately, there is no way to empirically test which is correct, but since the alternative analysis seems to have a more UG-like property, I would like to add it here before moving on to
the next topic.

Now let us notice that embedded [+Q] COMP, being different from matrix [+Q] COMP, has to be present overtly, perhaps because of selectional requirement by the matrix verb. Compare (24) and (25):

(24) a. Taro-wa [ dare-ga kono-hon-o kai-ta-no-ka ]
    Taro-NOM who-NOM this-book-ACC write-PAST-COMP-Q
    shira-nai.
    know-NEG
    “Taro doesn’t know who wrote this book.”

    b. *Taro-wa [ dare-ga kono-hon-o kai-ta-(no)-ϕ ]
       write-PAST-(COMP)-(Q)
       shira-nai.
    “Taro doesn’t know who wrote this book.”

(25) a. Dare-ga kono-hon-o kai-ta-no-desu-ka?
    who-NOM this-book-ACC write-PAST-COMP-DESU-Q
    “Who wrote this book?”

    b. Dare-ga kono-hon-o kai-ta-no-ϕ-ϕ?^{12}
       write-PAST-COMP-(DESU-Q)
    “Who wrote this book?”

In the case of English, the embedded [+Q] COMP does not appear when

^{12}Yasuaki Abe (personal communication) has pointed out to me that Nagoya dialect allows the deletion of the [+Q] morpheme -ka only. Thus in this dialect, (i) is acceptable:

(i) Dare-ga kono-hon-o kai-ta-no-desu-ϕ?
    who-NOM this-book-ACC write-PAST-COMP-DESU-(Q)
    “Who wrote this book?”

However, even in this dialect, the [+Q] morpheme can not be deleted in embedded sentences.
there is a *wh*-phrase in the spec of the CP, as in (26), but in Japanese, -ka must appear even when a *wh*-phrase is present in the same clause.

(26) a. I wonder who wrote this book.
   b. *I wonder who if he wrote this book.

Given this, the embedded EWH construction is ruled out because it necessarily deletes the [+Q] morpheme -ka, which is barred independently.

Incidentally, as (20b), repeated here as (27), shows, another copula/auxiliary verb -da may appear in an embedded question.

    what-NOM what-DA-Q understand-NEG

    "I don't understand what's going on."

And here again, deleting -ka results in unacceptability, as shown in (28):

    what-NOM what-DA-(Q) understand-NEG

    "I don't understand what's going on."

Based on this observation, one may claim that the analysis that I have just presented is preferred over the other. In other words, regardless of whether or not an EWH construction is involved, the sentence is ruled out, as long as the embedded [+Q] morpheme is deleted. But notice that there is no evidence that -da (or the combination of -da-ka) may function as a conditioning factor for the presence of the EWH construction as -desu (or the combination of -desu-ka) does. It is because, as I pointed out in (22) above, -da may attach to -ka only in embedded clauses, and thus it never appears in the EWH construction. Therefore, the unacceptability of a sentence like (28) does not sufficiently prove
that the unavailability of *-desu* in an embedded context plays no role with respect
to the unavailability of the embedded EWH construction. Because of the lack of
evidence, I will leave the issue open, suggesting that the second analysis, in
which we refer to the ban against *-ka* deletion in embedded clauses, is much
more preferable from the perspective of Universal Grammar.\textsuperscript{13}

In any case, it should be emphasized that the deletion of a copula element
or an auxiliary verb plays a crucial role in deriving the EWH construction.\textsuperscript{14}

\textsuperscript{13}Tohoku dialect allows *-da* to attach to *-ka* in matrix clauses. And the
dialect also has the EWH construction discussed in this paper. According to
several informants, the embedded EWH construction is marginally acceptable in
the Tohoku dialect. However, I have not been convinced that this shows that the
complementizer selection plays no role in excluding the embedded EWH
construction in Standard Japanese. The marginality found even in the Tohoku
dialect seems to suggest that *-ka* deletion is partly responsible for the
unacceptability of the embedded EWH construction in Standard Japanese.

\textsuperscript{14}The same seems to be true in Korean in a way. Korean has the same
word order with Japanese, and the copula comes at the end. Only when the
copula is deleted, a *wh*-phrase that is adjacent to the copula may be deleted.
Observe (i):

(i) a. Chelsoo-ka ecey po-ass-nun yenghwa-nun
    Chelsoo-NOM yesterday see-PAST-REL movie-TOP
    mues-i-ni ?
    what-copula-Q
    “What was the movie that Chelsoo saw yesterday?”

   b. Chelsoo-ka ecey po-ass-nun yenghwa-nun φ-φ-φ ?
      (what-copula-Q)
    “(What was) the movie that Chelsoo saw yesterday?”

   c. *Chelsoo-ka ecey po-ass-nun yenghwa-nun φ i-ni?
      (what)
    “(What) was the movie that Chelsoo saw yesterday?”

However, Korean is not exactly the same with Japanese in that it does
not allow the copula deletion in declarative sentences. Thus we find a contrast
between (iia) and (iib):

(ii) a. Taro-wa gakusei-desu. (Japanese)
    Taro-TOP student-copula
    “Taro is a student.”
3.0 Analyses

So far, I have been making the discussion as theory-independent as possible, avoiding technical complication, and tried to devote myself to describing the properties of the otherwise exotic EWH. Now I will attempt to analyze the EWH construction from the perspective of the Minimalist Program (Chomsky 1993, 1994, 1995). To begin with, let us recall the three major properties of the EWH construction that I summarized earlier.

(29) a. The EWH construction is a root phenomenon.
     b. The presence of the empty *wh*-interrogatives is dependent upon the auxiliary deletion.
     c. The empty *wh*-interrogatives are somehow licensed in the EWH construction while Japanese does not allow empty *wh*-phrases in general.

Chomsky (op. cit.) assumes a grammatical model that may be illustrated as (30):

\[
\begin{align*}
\text{b. Chelsoo-nun} & \quad \text{haksayng-i-ta. (Korean)} \\
\text{Chelsoo-TOP} & \quad \text{student-copula-Indicative} \\
& \quad \text{"Chelsoo is a student."}
\end{align*}
\]

(iii) a. Taro-wa gakusei-ϕ.

Korean requires further study. I will leave it for future research.
I am grateful to Soowon Kim for providing me with the Korean data.
In this particular model, there is no direct link between the two (and only) interfaces levels, namely PF and LF. This means that once the derivations separate at SPELL-OUT, there is no way for a PF derivation to have an access to its LF counterpart, and vice versa. This assumption greatly narrows the range of the possible courses that we may take in analyzing the EWH construction. It is because the empty *wh*-interrogatives are possible only in the EWH construction as I have shown in Section 2.1. We cannot simply say that this is a case of an optional deletion process of *wh*-phrases at PF. We must make sure that the deletion of *wh*-interrogative at PF occurs only in a specific configuration.

In what follows, I will argue that the EWH construction is possible only when a *wh*-phrase, the copula/auxiliary verb -DESU, and the [+Q] marker -ka form a constituent. I have already mentioned above that Japanese has a rule that raises -DESU to COMP so that they form a constituent, i.e., -DESU support (cf. Section 2.2). Then I need to show that a *wh*-phrase must also raise to become a constituent with -DESU-ka. It is also necessary to show that the rule that raises *wh*-phrases does not raise non-*wh*-phrases. It is because the EWH construction is only interpreted as a *wh*-question, not a yes/no question. In other words, the deletion of the predicate internal element is not allowed if it is not a *wh*-phrase,
as shown in (31):

(31)  Kinoo       Taro-ga       restaurant-de tabe-ta
       yesterday    Taro-NOM    restaurant-at eat-PAST
       no-wa         *((ebi desu) ka) ?
       COMP-TOP     prawn       DESU     Q

“Was it (prawns) that Taro ate at the restaurant yesterday?”

The asterisk affixed to the parenthesis is supposed to mean the sentence
(31) must be interpreted as an EWH sentence, not an abbreviated yes/no
question, if ebi-desu-ka is deleted. I will come back to this point shortly.

Under the assumption that there is no direct link between PF and LF,
thus PF derivations have no access to LF derivations after SPELL-OUT, it is
logical to adopt an analysis in which the EWH construction like (32b) has a
different structure from (32a) at PF:

(32) a.  Taro-ga   kat-ta-no-wa    nani(-desu-ka)?
       Taro-NOM   buy-PAST-COMP-TOP  what(-DESU-Q)

“What was is that Taro bought?”

b.  Taro-ga   kat-ta-no-wa       φ ?
     (what)

“(What) was it that Taro bought?”

One possible way to implement this idea is to assume that *wh-
interrogatives may be phonetically null (deleted at PF) only when they become a
constituent with -desu-ka. In other words, we may make the deletion of the
*wh-items parasitic to the deletion of the copula/auxiliary verb -desu. Recall that
the EWH construction is dependent upon the deletion of -desu-ka. If deletion
applies only to constituents in general, it would make sense to conjecture that
wh-interrogatives are a part of a constituent that is formed by -desu and -ka, when
they appear in the EWH construction. If they do not form a constituent with
-desu-ka, then we get a non-EWH construction. (33) illustrates the point:

(33) a. The EWH Construction

\[ [\text{SUBJECT CLAUSE \text{-wa}} \quad t_i \quad [\text{WH_i \text{-[-desu-ka]} }] ]? \]

b. Non-EWH Construction

\[ [\text{SUBJECT CLAUSE \text{-wa}} \quad \text{WH} \quad [\text{[-desu-ka]} ]? \]

Then, the next question to ask is whether there is evidence that shows the
overt raising of the wh-phrases in the EWH construction. And of course, we also
need evidence that shows there is no comparable overt raising of non-wh-
phrases. In the next section, I will argue that there is an optional wh-cliticization
to the copula/auxiliary verb -desu in Japanese.

3.1. Wh-Cliticization

Japanese has a vowel deletion rule that deletes a vowel after \( n \) when it appears
before certain consonants. Observe the following examples:\(^{15}\)

[^15]: I owe Yasuaki Abe in creating this (partial) paradigm. I am also grateful
to him for bringing to my attention the fact that the vowel reduction is somehow
obligatory for \( nani-de \) to mean 'why' in (34d).
We see -i dropping in (34) and -o dropping in (35) above. The conditioning factor for this phonological process is not entirely clear in the sense that exactly what phonetic features are responsible for this alternation, nor is the nature of this vowel deletion straightforward (see footnote 15).

However, it seems to be fair to say that *nani-* and *-no-* form a phonological unit with the conditioning elements that follow them, when this vowel deletion rule applies at PF. It is because if the copula/auxiliary verb *-desu* is deleted, this vowel deletion can not take place. Observe (36). Note the contrast between (36b) and (36c) especially:

(34) a. nan(i)-ka  
    what-Q  
    ‘what/something’  

d. nan(i)-de  
    what-by  
    ‘why/how’  

(35) a. na-n(o)-da  
    copula-COMP-copula  
    ‘(it) is’  

c. yuu-n(o)-demo nai  
    say-COMP-not really  
    ‘(it) is not really (so)’  

b. iku-n(o)-desu  
    go-COMP-copula  
    ‘(it) is going’  

d. boku-n(o)-toko/uchi  
    me-GEN-place/house  
    ‘my place/house’

(36) a. Taro-ga  
    mot-teiru-no-wa  
    nan(i)-desu-ka?  

    Taro-NOM  
    hold-PROG-COMP-TOP  
    what-DESU-Q  
    “What is it that Taro is holding?”

b. Taro-ga  
    mot-teiru-no-wa  
    nani-ϕ  ?

c. “Taro-ga  
    mot-teiru-no-wa  
    nan-ϕ  ?
The above three sentences are all supposed to mean the same. (36b) and (36c) are derived from (36a) by deleting the copula/auxiliary verb -desu and the [+Q] morpheme -ka. What is interesting here is the fact that the vowel deletion mentioned above is impossible in (36c). As a matter of fact, the availability of this vowel deletion seems to be quite regular. Consider the following paradigm:¹⁶

(37) Kore-wa ittai ________?
    this-TOP on earth

a. nani-na-no-desu-ka
    what-copula-COMP-DESU-Q
    “What on earth is this?”

b. nani-na-n-desu-ka

¹⁶I am grateful to Yasuaki Abe for letting me notice such a complete regularity.

The second morpheme -na- in (37) is a variant of a copula -da.
c. nan-na-no-desu-ka

d. nan-na-n-desu-ka
e. nani-na-no-\( \phi \)
f. *nani-na-n-φ

g. nan-na-no-φ

(37b) through (37h) are supposed to be derived from their full form (37a).

We find the above mentioned vowel deletion in the underlined places. Now notice that (37f) and (37h) are unacceptable, while (37e) is perfectly acceptable despite the fact that the copula/auxiliary verb -desu and -ka that follow are deleted. This strongly suggests that the vowel deletion here depends upon the following element. (37f) is out because the vowel o of no has dropped when -desu-ka that follows it is deleted. And the same is true of (37h) (notice that i dropping of nani is not a problem).

The point should be clear by now. All these considerations lead us to conclude that the wh-word nani- may optionally form a constituent with the
following copula/auxiliary verb -desu. Let us call this process wh-clitization. Let us tentatively assume that this cliticization is optional because we only delete -desu-ka in (37e) and (37g). If it were obligatory, the wh-word would also have been deleted with -desu-ka also in these cases. I will come back to this point later in section 3.3.

I must point out that the wh-clitization just observed has received a right name, because it does not apply to non-wh-words, as evidenced in (38):

(38) Kore-wa ？

this-TOP

a. kani/dani/tani/ani/uni/oni-desu-ka
   crab/tick/valley/brother/sea urchin/ogre-DESU-Q
   "Is this a crab/tick/valley/brother/sea urchin/ogre?"

b. *kan/dan/tan/an/un/on-desu-ka

c. kani/dani/tani/ani/uni/oni-Φ

d. *kan/dan/tan/an/un/on-Φ

(38d) is never possible because the conditioning factor -desu-ka is deleted. What is crucial here is (38b). If the above-mentioned cliticization also applied to non-wh-words, (38b) would be as acceptable as (36a). Since (38b) is all unacceptable, I conclude that the cliticization to the following copula/auxiliary verb -desu is only possible for wh-words.\

\[17\]

This is not precise, however. As the paradigm in (37) shows, a COMP element may also cliticize onto the following copula/auxiliary verb -desu. As a matter of fact, the cliticization phenomenon discussed in this paper may be merely a tip of an iceberg. The cliticization is also observed in the coordination context, as in (i) below:

(i) a. Anata-wa [DP[NP[nani-to-nani]-o]] tabe-ta-no-desu-ka?
   you-TOP what-and-what-ACC eat-PAST-C-copula-Q
   ‘what and what did you eat?’
Given that a wh-word can cliticize onto the following copula/auxiliary verb -desu in Japanese, one property of the EWH construction is automatically explained, i.e. (29b) repeated here as (39):\textsuperscript{18}

(39) The presence of the empty wh-interrogatives is dependent upon the auxiliary deletion.

\begin{align*}
\text{b. } \text{Anata-wa} & \quad ^*\text{nani-to-nani-o} & \quad \text{tabe-ta-no-desu-ka?} \\
\text{c. } \text{Anata-wa} & \quad \underline{\text{nani-to-nani-o}} & \quad \text{tabe-ta-no-desu-ka?} \\
\text{d. } \text{Anata-wa} & \quad ^*\underline{\text{nani-to-nani-o}} & \quad \text{tabe-ta-no-desu-ka?}
\end{align*}

Furthermore, presumably the same mechanism is at work in the phonological process that relates (iia) and (iib) below:

(ii) a. Kore-wa \quad Hata-no \quad da-ro? \\
this-TOP \quad Hata-GEN \quad \text{copula-Aux} \\
'This is Hata's, isn't it?'

b. Kore-wa \quad Hata-n-da-ro? \\
'This is Hata's, isn't it?'

It is interesting to notice that the contrast in (iii-a-b) below strongly suggests that this vowel drop phenomenon is not purely phonological in the sense that exactly the same surface phonological string does not lead to the same pronunciation (compare (iib) and (iiib)):

(iii) a. Kare-wa \quad Hatano \quad da-ro? \\
he-TOP \quad Hatano \quad \text{copula-Aux} \\
'He is Hatano, isn't he?'

b. ^*\text{Kare-wa} \quad Hatan-da-ro? \\
'He is Hatano, isn't he?'

I will leave the extensive analysis of this phenomena for future research.

\textsuperscript{18}I may be overgeneralizing the point. The positive evidence that suggests the existence of wh-cliticization is only available for nani 'what.' However, considering the fact that non-wh-nouns can never cliticize onto the copula/auxiliary verb -desu, I'd like to adopt the strongest hypothesis that the relevant line is drawn between wh- and non-wh, not between nani 'what' and the rest.
Only when a *wh*-word becomes a constituent with the auxiliary element that follows it, i.e. *-desu*, the *wh*-word may be deleted along with the deleting auxiliary element. In the next section, let us discuss why the EWH is possible in Japanese at all.

3.2. Tag-Controlled Deletion and the EWH Construction

The conclusion that we have just reached in the previous section reminds us of Tag-Controlled Deletion in English in the sense that an auxiliary verb forms a constituent with an adjacent element. In order for the deletion to become possible, forming a constituent or some sort of cliticization is required. Now let us consider the Tag-Controlled Deletion to deepen our understanding of the EWH construction.

Akmajian et al. (1995: 272-275) point out that the following elliptical sentences lead us to a descriptive generalization (41):

(40) a. Been sneaking to the movies again, haven’t you!
   b. Wants me to pay the bill, does he!
   c. Likes her new house, doesn’t she?
   d. Failing his courses, isn’t he?
   e. Steal my money, will you!
   f. Not ready to swim fifty laps, are you?

(41) Tag-Controlled Deletion

The Subject of the main sentence may be deleted, under the following conditions:

a. There is a tag.

b. If the main sentence contains an auxiliary, it *must* be contracted onto the subject if it *can* be contracted onto the subject.
In fact, as Akmajian et al. correctly point out, such deletion is hardly random. We cannot freely delete a subject or an auxiliary verb, as (42) and (43) show:

(42) a. *Have been sneaking to the movies again, haven’t you?
    b. *Is failing his courses, isn’t he?
    c. *Will steal my money, will you?
    d. *Are getting pretty excited, aren’t you?
    e. *Are not ready to swim fifty laps, are you?

(43) a. *You been sneaking to the movies again, haven’t you?
    b. *He failing his courses, isn’t he?
    c. *You steal my money, will you?
    d. *You getting pretty excited, aren’t you?
    e. *You not ready to swim fifty flaps, are you?

Furthermore, if the contraction is impossible, the Tag-Controlled deletion is impossible, either, as in (44b):

(44) a. It could /*It’d get on your nerves, couldn’t it?
    b. *Get on your nerves, couldn’t it?

The situation is rather mysterious if we notice the difference between a case with an auxiliary verb and that without it. Compare (40b, c) and the rest of (40), for example.

In (40b) and (40c), we find verbs that have agreement on them, which suggests that only the subject has been deleted in each case, whereas in other cases in (40), both subjects and auxiliary verbs have been deleted. This is why Akmajian et al. have reached the generalization as specified in (41).

In other words, the deletion of the subject is allowed in informal style of
English, but if there is an auxiliary verb that is contractible onto the preceding subject, the auxiliary verb must also be deleted along with the subject. And Akmajian et al. conjectured that the auxiliary verb deletion is only possible when it becomes a part of the element that can delete, i.e. subject.

This analysis explains why otherwise undeletable auxiliary verbs can delete in informal style of English. However, a mystery remains as to why auxiliary verbs MUST contract onto the subject when they CAN. I have no insight on this matter.\footnote{It may be possible that some version of economy principle is playing a role to block the ungrammatical cases. However, it seems implausible to me to hypothesize that the derivation with contraction is more economical than that without contraction, because that derivation requires at least one extra step, i.e. cliticization. I leave this issue for further study.}

It must be pointed out, however, that the importance of the above mentioned study is to clarify the significance of the formal properties in informal style of English. Even if the recoverability of information of the missing elements is guaranteed, a formal property such as constituency is required in order to make deletion possible. What I’d like to claim below is that we find exactly the same situation in EWH in Japanese.

As I have stressed above, the auxiliary verb deletion is essential for the EWH construction in Japanese. And I argued that a \textit{wh}-element forms a constituent with an auxiliary verb (copula), as a result of \textit{wh}-cliticization.

Based on the assumption that the EWH is a PF phenomenon, every piece of information at the LF side is supposed to be intact. Therefore, there should be no problem in interpreting the sentence even when there are missing elements at the PF side. In other words, the recoverability requirement should always be satisfied in the EWH construction.

What I’d like to suggest is that almost exactly the same mechanism is at
work in both Tag-Controlled Deletion of English and the EWH construction of Japanese. In both cases, an auxiliary verb forms a constituent with the preceding element, i.e. the subject in the case of Tag-Controlled Deletion, and a *wh*-element in the case of the EWH construction. The word order of Japanese is different from that of English because of the head parameter difference. As a result of it, the constituent that is deleted in the two languages is totally different. But it seems to be an error to conceive that completely different rules are involved in deriving the two constructions in informal style of the languages. What must be emphasized here is that such formal property as constituency plays a crucial role in informal style of language. Thus only constituents may be deleted even when the recoverability requirement is satisfied.

In the next section, let us discuss why only *wh*-elements may cliticize onto the auxiliary verb in the EWH while a non-*wh*-subject and an auxiliary verb may form a constituent in the Tag-Controlled Deletion.

3.3. Optional Violation of the Principle of Procrastinate
So far, we observed that there is a relevant constituent when there is a deletion. And I claimed that *wh*-elements may optionally form a constituent with the copula/auxiliary verb *-desu* in Japanese, and are thus susceptible of deletion. Let us now ask why only *wh*-elements may have this option.

In Minimalist Program (henceforth, MP), every operation is supposed to satisfy certain requirement. The basic structure-building operation Merge satisfies selectional requirement, and the structure-changing operation Attract satisfies certain morphological requirement by checking off relevant features. Furthermore, the operations themselves are evaluated with respect to economy principles, and less costly operations are preferred. In general, overt operations are more costly than covert operations, thus there is a principle known as
Principle of Procrastinate, which simply states that operations are covert unless they are somehow forced to take place overtly.

Now, under these assumptions, what we saw in previous sections are apparently problematic. It is because there seems to be no reason for \(wh\)-elements to cliticize onto the following element. I do not see any crucial difference between \(wh\)-words and non-\(wh\)-words with respect to their relation to the copula/auxiliary verb -\(desu\). Then, presumably the key to solve the puzzle may be found in the interpretation of the Principle of Procrastinate. In other words, is it an absolute principle that does not allow any violation, or is it to be understood as a sort of guiding principle that may be violated under some circumstances?

As a matter of fact, it has been suggested that the Principle of Procrastinate be interpreted as having the latter quality (e.g. Chomsky 1995 class lecture). Thus, let us pursue that possibility here and see how the things fit that hypothesis.

The first thing to be noted is that the EWH is an interrogative sentence. And interrogative sentences have a [+Q] COMP, which must be licensed overtly. We saw this requirement is satisfied by raising the copula/auxiliary verb -\(desu\) to the [+Q] COMP overtly.

Now, it is also important to notice that the EWH is a \(wh\)-interrogative sentence. In order to get a proper interpretation, every \(wh\)-phrase must be somehow linked to the [+Q] COMP at LF. As we saw in Section 2.1, Japanese does not require overt linking of \(wh\)-phrases to the [+Q] COMP in general. If the Principle of Procrastinate gives an absolute prohibition against the unnecessary overt operations, the \(wh\)-cliticization I proposed is never allowed. However, if the principle may be optionally violated, as we are assuming here, then we may be able to capture a contrast between \(wh\)-words and non-\(wh\)-words with respect
to their cliticizability.

Chomsky (1995: Chapter 4) has attempted to revise the checking theory in MP. It had been assumed in earlier versions of MP that feature checking was done at the domains of agreement projection by using a Spec-Head relation. Recently, however, Chomsky made a major revision of the theory, and assumes that agreement projection plays no role in the theory of grammar. What is relevant to feature checking is Head-Head relations, not Spec-Head relations. There is no difference between overt operations and covert operations with respect to feature checking. In both cases, relevant features of heads are attracted to relevant heads by the operation Attract F. In the case of overt operation, however, phonetic features have to be “pied-piped” as well (generalized pied-piping), presumably because of PF requirement, whereas in the case of covert operations, only attracting formal features (FF) suffices feature checking.

This revision of the checking theory seems to have significant relevance to the puzzle we would like to solve. Notice that the configuration of the constituent formed by \textit{wh}-cliticization, after the INFL-to-COMP raising, is exactly the same as what seems to be created at LF. The \textit{wh}-feature of the cliticized \textit{wh}-words establishes a Head-Head relation to the [+Q] COMP. In other words, the \textit{wh}-feature of the \textit{wh}-words that appear in the EWH construction is a “free rider” for the feature checking purpose.

It violates the Principle of Procrastinate, but does not violate any other requirement. There is no mismatch of the features. They are supposed to be checked anyway by the end of the derivation.

The situation of non-\textit{wh}-words, however, is entirely different. There is no reason for the non-\textit{wh}-words to cliticize onto the following copula/auxiliary verb. This is the same as in the cases with \textit{wh}-words. However, being different from \textit{wh}-words, non-\textit{wh}-words can not be free riders. They have no features to be
checked at [+Q] COMP. Actually, if they ever raised to the [+Q] COMP, the crash of the derivation would be inevitable because of the feature mismatch. Therefore, non-wh-words do not have an option to cliticize onto the copula/auxiliary verb -desu.

Incidentally, if such consideration is on the right track, we predict that if there is no feature mismatch, the cliticization is possible. And indeed, this seems to be exactly what is happening in the case of Tag-Controlled Deletion of English. As we saw above, there is a close connection between cliticization and Tag-Controlled Deletion. What is crucial here is that there is no need for the subject-auxiliary constituent to raise to [+Q] COMP in the Tag-Controlled Deletion. Notice that the clause that has the deletion site is not a question sentence.

To summarize, wh-words may cliticize onto the copula/auxiliary verb -desu in Japanese to become a free rider, while non-wh-words may not because it would result in feature-mismatch.

However, a question remains of why it is impossible for non-wh-words to cliticize onto the copula/auxiliary verb -desu in declarative sentences in Japanese. As examples in (45) below show, non-wh-words can not cliticize onto the copula/auxiliary verb -desu even in declarative sentences:

(45)  Kore-wa __________.

this-TOP

a. kani/dani/tani/ani/uni/oni-desu
   crab/tick/valley/brother/sea urchin/ogre-DESU
   "This is a crab/tick/valley/brother/sea urchin/ogre."

b. *kan/dan/tan/an/un/oni-desu

c. kani/dani/tani/ani/uni/oni-ϕ

d. *kan/dan/tan/an/un/oni-ϕ
As (45b) and (45d) show, the vowel drop does not take place regardless of whether or not the non-\textit{wh}-words are followed by the copula.

This is unexpected under the theory in which feature matching is solely responsible for the (un-)cliticizability of the pre-auxiliary verb elements. I have no principled explanation for this. However, it might be possible that the \textit{wh}-cliticization is not a cliticization onto the copula/auxiliary verb, but to the amalgam of the copula/auxiliary verb and the [+Q] morpheme -\textit{kn}. In other words, the copula/auxiliary verb -\textit{desu} raises to COMP first to license the [+Q] COMP, and then a \textit{wh}-word adjoins to COMP. This gives the configuration illustrated in (46):

\begin{equation}
\text{COMP}_{\text{max}}^0 \rightarrow \text{[+Q]}
\end{equation}

\begin{center}
\begin{tikzpicture}
    \node (root) { COMP\textsubscript{max} \[Q] };
    \node (wh) [below left of=root] { wh-word };
    \node (comp) [below right of=root] { COMP\[Q] };
    \node (desu) [below left of=comp] { -DESU };
    \node (q) [below right of=comp] { [+Q] };

    \draw (root) -- (wh);
    \draw (root) -- (comp);
    \draw (comp) -- (desu);
    \draw (comp) -- (q);
\end{tikzpicture}
\end{center}

Under this hypothesis, what attracts \textit{wh}-words is [+Q] COMP. Notice that the [+Q] morpheme is the head of the amalgam of the copula/auxiliary verb -\textit{desu}, indicated as -DESU in (46), and the [+Q] morpheme. Then, the mystery of the unavailability of non-\textit{wh}-word cliticization in declarative clauses disappears, because there is no [+Q] COMP in declarative sentences.

The major drawback of this proposal is that we can not make use of the “free-rider” analysis anymore, as pointed out by Jim Huang (personal communication). Notice that we must deal with two separate delicate issues at the same time. The distinction between \textit{wh}-word and non-\textit{wh}-word must be made on the one hand, and the consideration of optional violation of the
Principle of Procrastinate is necessary on the other.

There is an alternative analysis that potentially overcomes the difficulty. It may be that \textit{wh}-words, but not non-\textit{wh}-words, have a clitic variant. In other words, there are two types of \textit{nani}, for example; One is a full DP, and the other a bound morpheme. We may call the former a strong form, and the latter a weak form. The latter, i.e. the bound form, has a property that may be formally expressed as [-Aux], i.e. to be attached to Auxiliary. It must attach to an auxiliary verb to be well-formed. This would solve puzzles of both optionality of the cliticization and the \textit{wh} / non-\textit{wh} asymmetry mentioned above. Although this type of analysis might not be compatible with Attract F theory of Chomsky (1995) because it is the clitic, not the host, that has the crucial property of the operation (cf. Principle of Greed), this possibility seems to be worth exploring. I will leave the issue for future research.

In this paper, I have stressed that such a formal property as constituency plays an important role in the informal style of Japanese. There are a lot of issues to be considered with respect to \textit{wh}-cliticization I discussed in this paper. I hope this work has clarified some of those issues.

4. Summary

This paper discussed a \textit{wh}-related elliptical sentence in Japanese, which I call the Empty WH (EWH) construction. Although this particular type of sentence is mainly found in the informal style of Japanese, I have shown that it would be an error to conceive that some sloppy use of the language is involved in deriving the EWH construction. Rather, such a formal property a syntactic constituency seems to be playing a crucial role, which is supported by some vowel reduction facts
that strongly suggest that Japanese has a *wh*-cliticization rule that adjoins a
*wh*-element to the copula/auxiliary verb to form a deletable constituent. I also
claimed that although the same set of rules are involved in deriving the EWH
construction in Japanese and Tag-Controlled Deletion in English, the word order
difference between the two languages makes the EWH construction available
only to Japanese.

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Syntactic Aspect, Lexical Aspect and Objects in Spanish

Sonia Maruenda

This paper is a discussion of the relation between Syntactic Aspect – the contrast between perfective and imperfective tenses – and Lexical Aspect – Vendler's predicate classes, compositionally derived from the lexical properties of the verb and the nature of its arguments.

Discussion of Aspect has most always been semantic or descriptive in nature. However, Aspect can be dealt with with more effective results in the general framework of a syntactic theory. There is extensive evidence that Aspect is a syntactic phenomenon, represented and derived in the sentence structure which it determines in several important ways.

An example of how Aspect is dependent on and how it determines syntactic structure is seen in the construction of Lexical Aspect in accomplishment and activity VPs. As shown in (1), the syntactic nature of the object determines the perfectivity of the predicate and (lexical) aspect is derived compositionally (Verkuyl 1972) in the sentence structure:

(1)  a. Eat the/a apple                   PERFECTIVE
    b. Eat apples                       IMPERFECTIVE

The specific point of discussion of this paper is the derivation of six (basic) combinations of lexical and syntactic aspects in the Spanish clauses of Simple Past tenses. As shown in (2), lexical and syntactic perfectivity combine freely in Spanish.

(2)  a. Juan pintó un cuadro               PERF. /PERF.
    'J. painted a picture'

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b. Juan pintaba un cuadro
   'J. was painting/used to paint a picture'
   IMPER. / PERF.
c. Juan pintó cuadros
   'J. painted pictures'
   PERF. / IMPER.
d. Juan pintaba cuadros
   'J. was painting/used to paint pictures'
   IMPER. / IMPER.

The general framework used in the discussion of Aspect in this paper is the Government and Binding Theory of Grammar. The specific proposal is TAS or Tense Argument Structure (Zagona 1989 and subsequent papers). In this model, Tense and Aspect are syntactically represented and derived in the phrase structure, and, are governed by the general syntactic constraints that hold for all syntactic constructions.

The paper is organized in three sections. Section 1, is a summary of the TAS model with respect to the representation and derivation of Tense, Syntactic Aspect, and, Lexical Aspect; Section 2, applies and extends TAS to represent the relation between the two levels of Aspect and to derive the six aspectual combinations observed in the Spanish sentences in (2). Section 3, is a brief summary of conclusions.

1 The Framework: Tense Argument Structure (TAS)

1.1 TAS and the representation and derivation of Simple Present and Past tenses in Spanish.

Zagona (1989 and subsequent papers) has argued for a representation of tense in which Tense Phrase subcategorizes for two temporal arguments: the internal temporal argument, the Event VP, and; Speech Time, the External Temporal Argument or ETA. Tense head assigns the temporal roles of Event Time and Speech Time to these arguments. The structure in shown in (3):
(3)  
\[
\text{TP} \quad \text{ETA}_1 \cdot \text{Speech Time} \quad \text{T} \\
\text{T} [+/-\text{PAST}] \quad \text{VP}_{i/j} \cdot \text{Event Time}
\]

The feature [+/-PAST] in the head of TP is assigned to Event and constitutes its Visibility Condition\(^1\). It determines the possible temporal readings of its temporal index following the general binding conditions of the Binding Theory as stated and argued for in the Government and Binding Theory of Grammar (Chomsky 1981).

(4)  
\begin{align*}
\text{a. Binding Theory}\(^2\) \\
\text{Principle A:} & \quad \text{An anaphor must be bound in its governing category.} \\
\text{Principle B:} & \quad \text{A pronoun must be free in its governing category.} \\
\text{Principle C:} & \quad \text{An R-expression must be free everywhere.}
\end{align*}

\begin{align*}
\text{b. Governing Category} \\
\text{The governing category for A is the minimal domain containing it, its governor and an accessible subject/SUBJECT.}
\end{align*}

When Event is assigned [+PAST] by T, it is an R-expression. It has an independent temporal reference, and is governed by Principle C of BT. Speech Time - an accessible SUBJECT- does not bind it and their temporal indexes are necessarily disjoint in reference. Event Time precedes Speech Time by a Bottom-up ordering rule in which times lower in the tree structure precede in time the ones higher up. This is represented in (6a) for the Spanish sentence "Juan comió", 'J. ate'.

When Event is assigned [-PAST] its features are underspecified so the Present can be either: (1) An anaphor, the present moment, existential reading, or; (2) A pronominal, the generic present reading\(^3\).

---

\(^1\) Much in the same way that Case constitutes the Visibility Condition for DPs. Zagona p.c.

\(^2\) Haegeman 1994:228.

\(^3\) The distinction between the generic and existential readings is aspectual rather than temporal. Section 1.2 of this paper, presents a summary of Zagona (1993) which proposes an aspectual account of this opposition.
A Simple Present sentence like (5) has these two different readings in Spanish:\footnote{The question why the present moment reading is not generally available to the English Simple Present is discussed in Zagona (1989).}

\begin{enumerate}
\item[(5)] Los osos comen miel.
\begin{enumerate}
\item \textit{Generic reading}
\begin{enumerate}
\item 'Bears eat honey'
\item \textit{Existential, present moment reading}\footnote{Notice how the Existential Scope of the Subject is determined by the temporal/aspectual reading of the sentence.}
\begin{enumerate}
\item 'Bears always, in general, eat honey'.
\item \textit{The bears we are talking about/thinking about/looking at/now/are eating honey now/at this moment.'}
\end{enumerate}
\end{enumerate}
\end{enumerate}
\end{enumerate}

If [-PAST] is an anaphor, it is subject to Principle A of BT. Event must be interpreted as bound to \textit{Speech Time} and so simultaneous to it. This temporal reading is obtained by co-indexation. This reading is represented in (6b), below.

\begin{enumerate}
\item[(6)]
\begin{tabular}{c}
\begin{tikzpicture}
\node (TP) at (0,0) {TP};
\node (ETA-Speech Time) at (-2,-2) {ETA - Speech Time};
\node (T) at (-3,-4) {T};
\node (VP-Event Time) at (2,-4) {VP - Event Time};
\node (T1) at (-3,-6) {T};
\node (PAST) at (2,-6) {\footnote{The original proposal supposes Event adjunction to IP. However, to gain scope over ETA (which raises at LF to spec of CP), Event must raise past it. I propose adjunction to CP.}};
\end{tikzpicture}
\end{tabular}
\end{enumerate}
have scope over its own trace. From this privileged position, Event also has scope over Speech Time and so includes it. This is represented below.

(7)  

\[
\begin{array}{c}
\text{CP} \\
\text{VP}_j - \text{Event Time} \\
\text{ET}_{A_i} - \text{Speech Time} \\
\text{C'} \\
\text{C} \\
\text{IP} \\
\text{e}_i \\
\text{I'} \\
\text{I} \\
\text{e}_j
\end{array}
\]

The Simple Perfective and Imperfective Past opposition of Spanish is dealt with in much the same way that the generic/present moment contrast of the Simple Present.

(8)  
a. Juan comió  
   'J. ate'  
   PERFECTIVE PAST  
b. Juan comía  
   'J. was eating/used to eat'  
   IMPERFECTIVE PAST

As [+PAST] tenses, these are R-expressions. They must be free and disjoint from \textit{Speech Time}. Because they are lower in the tree, they temporally precede \textit{Speech Time}. Their opposition is derivable from the fact that the perfective is a definite expression; while the imperfective is indefinite. The imperfective past -as before the generic present- must undergo QR to gain scope over its trace. From this position it quantifies over this temporal variable yielding either: (1) The ongoing process reading, \textit{was eating}, or; (2) The habitual reading, \textit{used to eat}; both readings
characteristic of this tense. (9) is a representation of the imperfective sentence (8b): 

(9) \[
\begin{array}{c}
\text{CP} \\
\text{ETA}_i - \text{Speech Time} & \text{C'} \\
\text{C} & \text{IP} \\
\text{VP}_j - \text{Event Time} & \text{IP} \\
(\text{Imperfect past}) & \text{I'} \\
\text{e}_i & \text{I} \\
\text{e}_j & \text{e}_j
\end{array}
\]

In this way, TAS does not only propose that Tense (and Aspect) is present in syntax but also that its values are derived in the tree structure and are not, as most commonly assumed, semantic primitives.

1.2 TAS, Subevent Structure and the nature of the Object

Zagona (1993b) proposes an argumental treatment of subevent structure. The predicate V-head, in accordance with its lexical properties, assigns subevent roles to its arguments. These roles are: [+/-INITIAL] and [+/-FINAL]. Typically, in accomplishment predicates (Vendler 1967), [+/-FINAL] is assigned to the (direct) object.

In this way, the changes of state of the object measure-out Event (Tenny 1989). The initial state of the object signals the initial point of Event; the final state reached by it, its end. The positive values for these features indicate that a change of state has been reached; the negative values, that it has not. Consider the sentences below:

---

7 Notice that the [+PAST] does not include Speech Time so it cannot raise past ETA at LF. This, of course, is still in need of a syntactic explanation.
(10)  

a. Pintar el/un cuadro  
'Paint the/a picture'  
LEXICAL PERFECTIVITY

b. Pintar cuadros  
'Paint pictures'  
LEXICAL IMPERFECTIVITY

The verb "pintar" has a [+FINAL] subevent role to assign to its object. In (10a), this role is assigned to the singular argument. In this sentence, the end of Event is reached when the/a picture is finished (i.e., completely painted). The predicate is (lexically) perfective.

In (10b), the indefinite plurality of the objects brings about an indefinite plurality of final states. The [+FINAL] feature in V is quantified over. An indefinite number of pictures are painted but no single final state reached indicates the end of Event. The predicate is (lexically) imperfective.

The derivation of these two sentences is different. In (10a), the object (OB) raises to spec of Agreement-Object Phrase\(^8\) to check its features. In this position, it is assigned accusative Case and the temporal/aspectual role of [+FINAL]. In (10b), the object, as an indefinite expression, does not raise to this position. It is not assigned structural Case but exhibits inherent Case. The [+FINAL] feature remains unassigned in Agr-head. In LF the indefinite object adjoins to Agr-O P and from this position quantifies over [+FINAL] and its own trace producing an indefinite plurality of changes of state (Zagona 1993a). Sentences (10a-b) are represented by (11a-b) respectively:

---

\(^8\) Alternatively, (Inner) Aspect Phrase.
An analysis like the one outlined for subevent structure is, then, not unlike the analysis already posited to account for the contrast between the generic and present moment Simple Present, and, the perfective and imperfective Simple Pasts. Aspectual features are present as indexes, again, orderable bottom-up (Zagona 1993) and, when the indefinite (aspectual) arguments undergo QR, imperfectivity is obtained. In this way, again, the aspectual readings of the predicates are derived from the different binding properties and binding environments of temporal/aspectual indexes.

1.3 Syntactic Aspect

As pointed out earlier, the two different readings available to the Present or the Past tenses are *aspectual* not temporal in nature. The aspectual distinctions
introduced by Tense constitute the Syntactic Aspect of the sentence. Event may be perfective or imperfective. In (12), sentence (a) is perfective and (b) is imperfective.

(12)  

<table>
<thead>
<tr>
<th>Subevent</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Juan pintó un cuadro</td>
<td>PERFECTIVE</td>
</tr>
<tr>
<td>b. Juan pintaba un cuadro</td>
<td>IMPERFECTIVE</td>
</tr>
</tbody>
</table>

Zagona (1993) proposes that Tense, like V, has a subevent structure: E1, initial moment of Event and E2, final moment of Event. Tense assigns these subevent roles to its (internal) argument, Event, in a larsonian tree structure analogous to that of VP. E1 is assigned to Event in its base position, and; then, E2 is assigned to it when Event moves into the spec position of (Outer) Aspect Phrase. This configuration is represented in (12):

\[
\begin{align*}
(12) & \quad TP \\
& \quad ETA_i \quad T \\
& \quad \quad \quad T \quad AspP \\
& \quad \quad \quad \quad Event_j \quad A' \\
& \quad \quad \quad \quad \quad E2 \quad TP \\
& \quad \quad \quad \quad \quad \quad T_k+A \\
& \quad \quad \quad \quad \quad \quad \quad t_j \\
& \quad \quad \quad \quad \quad \quad \quad \quad E1 \quad e_k
\end{align*}
\]

In Spanish, it is argued, the perfective past morphology marks the presence of E2; imperfective past morphology, its absence. In the following section, all three of these proposals are put together to derive six (basic) aspeclual readings of the simple Past clauses in Spanish.
2 The derivation of the aspectual readings of clauses of simple tenses

2.1 Analysis of the data

This section addresses the question of how Syntactic and Lexical Aspect relate in the structure of clauses of simple tenses. Consider first the facts of the perfective Spanish sentences in (13), repeated from (2):

(13) a. Juan pintó un cuadro \hspace{1cm} \text{PERF. / PERF.}
    \hspace{1cm} 'J. painted a picture'

b. Juan pintó cuadros \hspace{1cm} \text{PERF. / IMPER.}
    \hspace{1cm} 'J. painted pictures'

In (13), *Event* is perfective, it has been assigned E2. In (a), lexical aspect is also perfective. The end of the subevent constitutes the end of *Event*. That is, E2 and [+FINAL] concur. In (b), lexical aspect is imperfective. There are an indefinite number of changes of states. In this case, E2 is different from any [+FINAL] state reached. Consider, next, the imperfective sentences in (14):

(14) Juan pintaba un cuadro \hspace{1cm} \text{IMPER. / PERF.}

a. 'J. was painting a picture'

b. 'J. used to paint a picture'
   
Juan pintaba cuadros \hspace{1cm} \text{IMPER. / IMPER.}
   
c. 'J. was painting pictures'

d. 'J. used to paint pictures'

In (a) and (c), the completion of *Event* is not asserted, E2 is absent. In (a), [+FINAL], although assigned in VP, is not reached. The picture is not yet finished. In (c), several [+FINAL] states may have been reached. It is the completion of *Event* which is not asserted.

In (b) and (d), an indefinite number of *Events* is asserted. There is a multiple (indefinite) number of E2s. In (b), each *Event* ends when a picture is
finished. There is a [+FINAL] state per E2 asserted. In (d), there is an indefinite number of [+FINAL] states and an indefinite number of E2s which, again, do not concur.

In sum, there seems to be a principled way in which E2 and [+FINAL] can interact. Depending on their perfectivity, they concur or are disjoint. Syntactic perfectivity always binds lexical perfectivity. Also, while syntactic imperfectivity may bind lexical perfectivity; lexical imperfectivity cannot be bound.

2.2 Proposal: [+FINAL] is an anaphor and E2 its antecedent

The facts in section 2.1 can be accounted for by reference to binding. The binder of [+FINAL] is E2. Because [+FINAL] and E2 can concur, [+FINAL] may be better analyzed as a temporal anaphor. (15) depicts the binding proposed for (13a).

(15) \[E2_i \quad [+F]_i\]

The other cases where E2 and [+FINAL] do not seem to concur are a consequence of QR. When the indefinite OB(ject) raises and quantifies over [+FINAL], E2 cannot bind it because [+FINAL] is a variable already bound by OB. (16) corresponds to (13b).

(16) \[E2_j \quad \text{OB}_i \quad [+F]_i\]

In (14a,c), E2 is not present. It cannot bind [+FINAL] in (14a). Because it is an anaphor, E1 must do it. This is shown in (17a-b).

(17) a. \[E1_j \quad [+F]_j\]

b. \[E1_j \quad \text{OB}_i \quad [+F]_i\]

In (14b,d), there is an indefinite number of E2s. If [+FINAL] is present, like in (14b), each E2 corresponds to one [+FINAL]. This is obtained through binding
and is represented in (18a). If [+FINAL] is not accessible, because of OB QR, like in (14d), each E2 is disjoint from any [+FINAL]. This is represented in (18b):

(18)  
   a. [Event₁ [E₂₁] [ [ +F ]₁ ] ]  
   b. [Event₁ [E₂₁] [OB₁ [ +F ]₁ ] ]

3 Summary of conclusions

TAS is a proposal that derives the temporal/aspectual readings of the sentence from the binding properties and binding contexts of temporal/aspectual indexes. In this paper, this idea has been expanded to apply to the relation between the two different levels of aspect present in clauses of simple tenses: Syntactic and Lexical Aspect.

The principled manner in which lexical and syntactic (im)perfectivity interact, may be accounted for in terms of binding relations. Specifically, lexical perfectivity must be bound when it is present. This argues for an analysis that considers it an anaphoric index and syntactic (im)perfectivity its antecedent. Lexical (im)perfectivity, on the other hand, cannot be bound because it is already in a operator-variable relation with OB.

4 References


Expletive Subjects and Chain Formation
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0. Introduction
This paper examines a number of questions surrounding expletive subject constructions in English. In particular, these questions relate to two basic issues which have been the topic of much discussion in the recent literature in the framework of the minimalist program (Chomsky 1995): the covert position of the indefinite DP associate of the expletive, and the overt position of that associate. With regard to the covert position of the associate, what is at issue is the mechanism by which the associate can check agreement against the inflected verb. Is this agreement accomplished by raising of the associate to the position of the expletive, or by some other means? With regard to the overt position of the associate, it has been argued in Chomsky 1995 and elsewhere that the position of the associate is determined at least in part by economy considerations: movement is costly, so the associate must remain in situ if possible. However, in certain construction types the associate does not appear to be in its base position but rather in a preparticipial position, and so its apparent “short” movement must be explained.

The structure of the paper is as follows. In section 1 we outline Chomsky’s 1995 account of English expletive constructions. Section 2 is concerned with the LF position of the associate and some empirical puzzles for Chomsky’s account. In section 3 we present an alternative account of expletive constructions that deals with these problems and we discuss some additional consequences of this account. Section 4 deals with the preparticipial surface position of the associate in some constructions and extends the analysis presented in section 3. In section 5 we turn to constructions involving both locative inversion and expletives, and we claim that these are instances of Multiple Subject Constructions (MSCs) in English. Section 6 summarizes some consequences for the theory and remaining open issues. In section 7 we give a brief summary.

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1 Section 2 of this paper was presented at SCIL 1996, and section 5 at WCCFL 16 in 1997.
1. Chomsky's account of expletive constructions

In this section we will give a summary of Chomsky's 1995 analysis of the expletive construction in English.

Chomsky's analysis of the feature content of the expletive and the checking mechanisms involved in the derivation of an expletive construction rests on the following assumptions:

(i) The expletive *there* bears only a categorial feature D, it doesn't bear any other formal features
(ii) The associate bears the categorial feature D, and the standard set of formal features (Case and Phi-features)
(iii) Covertly, the features of the associate move and adjoin to the inflectional head of the matrix clause

Chomsky motivates the feature content of the expletive with an argument based on example (1):

(1) *there seem [that [a lot of people] are intelligent]*

If we were to assume that the expletive has Case, we would incorrectly rule in this example: *there* could check the Case-feature of the matrix inflection as well as its D-feature overtly. The associate would check D-, Case-, and agreement-features of the embedded inflection overtly. The phi-features on the associate - being [+interpretable] - would survive this checking process without undergoing deletion, and as a result these phi-features would be available for covert feature raising. And this is exactly where the problem emerges: The covertly raised phi-features of the associate would check the agreement features of the matrix inflection, leaving no [-interpretable] unchecked, and therefore allow for a converging derivation - contrary to fact. Hence, Chomsky concludes, we cannot assume that the expletive bears Case-features.

A similar argument applies to the possibility of the expletive having phi-features. If that were the case, nothing would force agreement between the matrix verb and the associate:

(2) *there seem to be [a man] in the room*
Overtly, the expletive would check the D- and the agreement-feature of the matrix inflection. The features of the associate would then raise covertly and adjoin to the matrix inflection where they would check the remaining Case-feature. Again, all [-interpretable] features are checked before the C-I interface is reached, and the derivation should converge with the matrix verb agreeing with the expletive and not with the associate.

Having established these assumptions, Chomsky points out that a distinction between two types of expletives can be predicted now, allowing for an interesting prediction: expletives like English there that lack Case- and phi-features will force the features of the associate to raise covertly. The result is twofold: the matrix verb has to agree with the associate, and the raised features of the associate will act as a potential binder and controller just as if the associate were in subject position of the matrix clause. This situation should not obtain in languages like French, where the expletive il is a full DP, bearing all the relevant features. In that case, the features of the associate will not have to raise at all, and hence the associate will not be able to bind and control as if it were in subject position.

In the next section, we will examine more closely the question as to where the associate is located at LF in English and in languages without associate raising such as French.

2. The LF position of the associate

2.1 Chomsky 1995

Chomsky 1995 provides a number of arguments that the associate in English is in an LF-position from which it has the same binding and control options as a matrix subject. The first piece of evidence comes from control into adjunct clauses and binding (Chomsky 1995:274):

(3)    a. There arrived three men (last night) without identifying themselves
       b. There arrived with their own books three men from England

(4)    a. *I met three men (last night) without identifying themselves
       b. *I found with their own books three men from England

These examples show that the associate must be in a higher position at LF than a normal direct object. In (3a) the associate can control the PRO-subject of
the adjunct clause, an option that is unavailable to the direct object three men in (4a). Similarly, in (3b) their own is bound by the associate, which is impossible in (4b) with a direct object as antecedent. Note that these arguments are somewhat sketchy, though. While the control facts seem reasonably clear, the problem with the (b) examples is that it is not at all clear in what position the adjunct with their own books is. In particular, why does the contrast in (3-4b) only obtain when the binding DP is shifted to the right? Note that (5) below is perfectly fine:

(5) I met three men from England (yesterday) with their own books

In (5) the adjunct with their own books can obviously be c-commanded by the direct object three men from England. Since the contrast in the control cases (3a-4a) is quite clear, however, we will set these problems aside in what follows.

Chomsky 1995 also points out a contrast between English and French that is expected under his analysis of the expletive construction: In French, the associate in an expletive construction cannot control the PRO-subject of an adjunct clause as shown in (6):

(6) *il est entré trois hommes sans s'annoncer
    expl is entered three men without cl\textsubscript{refl}-identifying
    "there entered three men without identifying themselves"

Similarly, ne-extraction data in (7) show that the associate from which en is extracted is not in subject-position.

(7) *il en est entré trois t sans s'annoncer
    expl of-them is entered three without cl\textsubscript{refl}-identifying

Recall that under Chomsky's assumptions about the feature content of expletives these facts follow rather straightforwardly: in French, the expletive il according to Chomsky bears all the features of a normal DP, hence associate raising is not necessary, consequently the associate stays in its original position and does not assume the control and binding properties of a subject.
A problem for this analysis is created, however, by the [-interpretable] Case-feature of the associate *trois hommes* in (8):

(8) \[ \text{il est entré trois hommes} \]
\[ \text{expl is entered three men} \]

If the expletive *il* checks the Case and agreement features of the matrix inflection, and these delete after checking, the Case-features of the associate will not be checked at all, and the derivation should crash. This problem points in the direction that expletives like French *il* should bear phi-features, but not Case-features. Then, of course, the problem arises why covert raising of the Case-features of the associate does not extend the binding and control domain of the associate as it does with raising of the associate in English. We will come back to the exact feature content of a French-type expletive in section 6.

Chomsky 1995 makes another observation about the control and binding options of an associate. He observes that in constructions involving an associate and an expletive that raises from an intermediate subject position to the matrix subject (henceforth Expletive Raising or ER-constructions), the associate does not behave as if it were in the matrix subject position (Chomsky 1995:275):

(9) \[ *\text{there seem to each other to have been many linguists given good job offers} \]

Chomsky offers a possible analysis here in terms of anaphor movement at LF: suppose that the anaphor in (9) must adjoin to the head of the matrix clause at LF to be licensed. Chomsky suggests that the associate in a sentence like (9) checks the matrix agreement features by covert adjunction of the formal features of the associate to the matrix I\(^0\) (i.e., by Move-F). These two adjunction operations should yield either the structure in (10a) or in (10b), depending on the ordering of LF operations.

(10) a. \[ [I \text{An } [I \text{FF(} \text{linguists} \text{)} I ]] \]
    b. \[ [I \text{FF(} \text{linguists} \text{)} [I \text{An } I]] \]
Chomsky suggests that neither of (10a-b) is a legitimate configuration for binding of An by FF(linguists), "on reasonable assumptions". Lasnik 1995 points out, however, that this analysis would predict that no binding should be possible from an ECM-subject. Thus, under Chomsky's assumptions, the acceptable sentence in (11) should include in its representation a structure like (12), which is virtually indistinguishable from (10), and hence should (incorrectly) rule the sentence out.

(11) The DA proved [two men to have been at the scene] during each other's trials.

(12) a. [f An [f FF(two men) I ]]
b. [f FF(two men) [f An I ]]

A further objection we might raise with respect to Chomsky's suggestion is that it predicts that the same facts should hold in sentences without there-raising. But as we saw above, such sentences are acceptable:

(13) There arrived two men last night with each other's invitations.

To summarize, Chomsky's analysis makes the prediction that in English the associate should behave for all intents and purposes as if it were in the position of the expletive. It also predicts that in French the associate should only c-command from its base-position since it doesn't undergo covert raising. This picture seems correct in general, but we identified two problems with it:

(i) The analysis of French il as bearing D-, Case-, and phi-features cannot be correct. Specifically it cannot be correct that il bears Case-features
(ii) It remains a mystery why expletive constructions involving expletive raising do not trigger an extension of the c-command domain of the associate to the position overtly occupied by the expletive

2.2 Lasnik 1995
Lasnik 1995 demonstrates that, in general, the prediction that the associate in English c-commands as if it were in the position of the expletive is rather
problematic. His first example involves an ER-construction just as in Chomsky’s example (9) above:

(14) *There seem to each other to have been many linguists given good job offers

Next, Lasnik points out that in example (15) below, the associate again does not behave as if its scope were determined from the subject position.

(15) There aren’t many linguistics students here

Lasnik observes that in (15) many linguistics students has to have narrow scope with respect to negation, as can be seen in (16) which is synonymous with (15):

(16) There are few linguistics students here.

This fact is unexpected if the c-command domain of the associate is determined from the position of the expletive.

A third phenomenon pointing in the same direction involves negative polarity items. In Lasnik’s example (17), the associate does not seem to be able to c-command the negative polarity item in the matrix clause. Note, however, that this example again involves an ER-construction. Recall furthermore that in this situation even binding facts show that the overt position of the expletive is not the position from which the associate c-commands (see example (9) above):

(17) *There seem to any philosophers to have been no good linguistic theories formulated

Lasnik finally adduces a Weak Crossover (henceforth WCO) example, where the associate again behaves as if it never raises to a VP-external A-position:

(18) *There seems to his lawyer to have been some defendant at the scene
Sentence (18) is out presumably because of a WCO effect: The associate QRs to an A'-position from which it c-commands both its trace and the bound variable pronoun. But if we assume with Chomsky that the features of the associate raise to the matrix inflection and function as an A-binder and controller from there, this WCO effect should never arise in the first place. The raised features of the associate should be the local A-binder of the pronoun, obviating the WCO effect. But again, Lasnik's example (18) is an instance of ER, not a simple expletive construction.

To summarize, Lasnik 1995 points out the following problems for Chomsky's analysis of expletives:

(i) In ER-constructions the associate does not behave as if it c-commands and A-binds from the matrix subject position for binding, NPI licensing, or WCO phenomena.

(ii) In simple expletive constructions, the associate does not behave as if it could c-command from the subject position with respect to its scope-interaction with negation.

2.3 den Dikken 1995

In addition to the impossibility of the associate acting as a binder in an ER-construction (see the discussion of (9) above) and the WCO examples involving ER-constructions as in (18) above, den Dikken 1995 presents an additional piece of evidence against raising of the associate. Following Tancredi 1990, den Dikken assumes that only has to c-command the DP it is associated with throughout the derivation. The contrast in (19) below can then not be accounted for under an associate raising analysis:

(19)  a. There might only be one man in the garden
    b. *One man might only be in the garden.

If the associate raised in (19a), it would escape the c-command of only, leading to the same degree of deviance that (19b) exhibits.

Den Dikken hence rejects the associate raising analysis. Instead he adopts the account of expletive constructions given by Hoekstra and Mulder 1990, which has it that the associate stays in situ because there is a locative originating in the small clause complement of the copula and so has referential properties of its own. We will have our own reasons for rejecting
this account which we will discuss in section 3.3, but for the moment we may note the difficulties this proposal has with Chomsky's examples (3), repeated here:

(3)  a. There arrived three men (last night) without identifying themselves
     b. There arrived with their own books three men from England

2.4 Some generalizations: expletive raising constructions versus simple expletive constructions

In this section we present a set of data surrounding simple expletive constructions (SECs) and expletive raising constructions (ERCs). These data all focus on the alleged position of the associate at LF, which – as we have seen in the previous discussion – should be identical for SECs and ERCs under Chomsky’s analysis. Our data fall into the following classes: (i) binding, (ii) NPI licensing, (iii) Weak Crossover (WCO), (iv) Control, (v) scope of negation, and (vi) only interpretation.

(i) Binding. In SEC, the associate can bind from the position of the expletive:

(20)  a. There arrived three defendants during each others trials
     b. There arrived three men yesterday with each other's hats in their hands

In ERC, the associate fails to bind from the position of the expletive:

(21)  *There seem to each other to have been many linguists given good job offers.

(ii) NPI licensing. In SEC, the associate can license a negative polarity item which it does not overtly c-command:

(22)  a. There appeared no solutions to this problem in the journal in any theory
     b. There arrived no people at the hot spring with any clothes on

In ERC, the associate fails to license a non-c-commanded NPI:
(23) *There seem to any philosophers to have been no good linguistic theories formulated.

(iii) WCO. In SEC, no WCO effect is induced by QR of the associate across a coindexed pronominal:

(24) There arrived someone\(_i\) at the party without his\(_i\) wife's approval.

In ERC, a WCO effect appears, which means that the associate does not behave as if it has raised to the position of the expletive:

(25) *There seems to his\(_i\) lawyer to have been some defendant\(_i\) at the scene

(iv) Control. In SEC, the associate can control into a non-c-commanded adjunct clause:

(26) There arrived three men last night without identifying themselves.

As for ERC, the associate again fails to behaves as if raised:

(27) *There were believed after identifying themselves to have been three men at the scene.

(cf. Three men were believed after identifying themselves to have been at the scene.)

(v) Scope of negation: In both SEC and ERC, the associate behaves as if in situ.

(28) a. There aren't many linguistics students here ≠
    b. Many linguistics students aren't here

(29) a. There don't seem to be many linguistics students here ≠
    b. Many linguistics students don't seem to be here

(vi) only interpretation: In both SEC and ERC, the associate behaves as if in situ.
(30)  a. There might only be one man in the garden  
    b. *One man might only be in the garden

(31)  a. There is likely to only be one man in the garden  
    b. *One man is likely to only be in the garden

2.5 Is there LF associate raising?  
The generalizations create a contradictory picture. In particular the only-construction and the scope-interaction of the associate with negation don't fit the picture that WCO, control, NPI licensing and binding present. With respect to the latter set of phenomena, the associate behaves as if raised to the first c-commanding position occupied by the expletive, and with respect to the former the associate behaves as if it is in situ. In what follows, we investigate the only-construction and the scope-interaction with negation and we show that upon closer investigation these two sets of facts do actually fit the generalization about raising of the features of the associate.

The situation with respect to the only-construction is more complex than implicated by den Dikken, as a review of the facts presented in Aoun and Li 1993 suggests. Aoun and Li observe that covert Wh-movement (just like the covert associate-raising case discussed above) does not cause ungrammaticality when crossing only. Their example (Aoun and Li 1993:206) is reproduced below:

(32)  Who only likes what?

In (32), the features of what presumably raise covertly to CP, but still the sentence is fine, even though only is c-commanded by these features after covert raising. Aoun and Li argue on the basis of data like these that in fact there is no such thing as covert wh-movement. If one were to assume covert Move-F in these cases, however, one would have to say that Move-F simply doesn't remove the wh-element from the c-command domain of only².

² Aoun and Li 1993 show that quantifier raising does seem to remove a quantified phrase from the c-command domain of only. Consider the examples (i) and (ii) below (Aoun and Li 1993:207):
Without being able to offer a full account of the restrictions governing the distribution of only, we can still conclude that the following hypothesis is a reasonable one:

**Hypothesis about Move-F**

Covert Move-F, by raising only the features of a term, does not remove that term from the c-command domain of only.

Under this hypothesis it is expected that both wh-in-situ and associates in expletive constructions will behave as if they never raise for the purposes of c-command by only.

To conclude, den Dikken's argument based on the distribution of only loses its strength once it is observed that covert Move-F does not seem to affect the requirement that only has to c-command the DP it is associated with. If this is correct, we can maintain the generalization that the features of the associate of an expletive raise covertly.

Let us turn now to the scope interaction of the associate with negation. Recall that the sentences in (15-16), repeated below as (33) for convenience, are synonymous.

(33)  a. There aren't many linguistics students here 
    b. There are few linguistics students here.

Lasnik 1995 took this as evidence that the associate necessarily takes narrow scope with respect to the negation, and hence does not behave as if raised covertly. The problem is a more general one, though. The fact that *many linguistics students* has to have narrow scope follows from an independent

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(i) Someone loves every boy in the room
(ii) Someone only loves every boy in the room

Sentence (i) is ambiguous between a wide-scope and a narrow-scope reading of *every boy in the room*. Sentence (ii) is unambiguous, with only the narrow-scope interpretation. This is expected if covert QR of *every boy in this room* is blocked in (ii) because the QP may not be moved out of the c-command domain of only. Note that these data could be linked to the fact that QR is not a feature-checking operation and hence does not involve Move-F. We will leave this question open.
observation about expletive constructions: The associate has to have a non-presuppositional, cardinal reading. Following Diesing 1992, a DP with a weak determiner such as many can have either a presuppositional or a non-presuppositional (cardinal) reading. Diesing proposes her Mapping Hypothesis, according to which the non-presuppositional reading is obtained if the DP stays within VP where it undergoes existential closure, while the presuppositional reading results from raising of the DP to a VP-external position. If we adopt Diesing's analysis, what really goes on in Lasnik's example is that the associate has narrow scope because it stays within VP to undergo existential closure. This, of course, does not answer our question yet, it just broadens it: why does the associate count as if it were in VP for the purpose of its non-presuppositional (cardinal) interpretation and for the purpose of its scope-interaction with negation?

It goes far beyond the scope of this paper to reconcile the Mapping Hypothesis with a Minimalist Framework. What we can do, though, is to assume that for different interpretative processes at LF the position of different features or elements of a term is important. Let us assume, then, that for the interpretation of a term itself (non-presuppositional reading of an associate), as well as for its interaction with only and its interaction with negation the position of the term itself is relevant, while for the licensing of negative polarity items, binding, control, and WCO the position of (some of) the features of that term are relevant. This is stipulative, and what is needed is certainly a better understanding of why that split should obtain, and why it should fall exactly along these lines. The only speculation we can offer at this point is that the position of the term itself seems to be important for scope-related phenomena, while the position of its features are important for A-related phenomena. NPI licensing patterns with A-related phenomena; maybe this is not a complete accident, given that negative polarity items are licensed by a variety of features (WH, negation, modals, conditionals etc.), rather than by specific terms.

To summarize, under the hypothesis that the position of a term, and not the position of its features, is relevant for the only-construction, the interpretation of a weakly quantified term as presuppositional or non-presuppositional, and scope-interaction with negation, Lasnik's and den

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Dikken's examples can be accounted for without abandoning the hypothesis that there is a covert raising process involved in the expletive construction.

3. An alternative analysis: derivational formation of chain links and feature transmission
We have now seen that there are a number of questions pertaining to the LF-position of the associate. As we have seen, none of the Minimalist analyses of expletive constructions discussed above can fully account for the array of facts without giving rise to contradictions. In particular, we have identified the following question: why do the features of the associate behave as if they are in the position of the expletive in SECs, but only in the position of the trace of the expletive in ERCs?

3.1 Assumptions
Our analysis will be based on the formation of a chain-link between the associate and the expletive as already suggested in Chomsky 1981 and Safir 1985. Where we will depart from those analyses is in taking the transmission of features in a chain as a derivational, link-by-link operation.

We share with Chomsky 1995 the assumption that the English expletive there bears only a [+interpretable] categorial feature D. The link between the associate and the expletive is formed independently of movement, that is by an operation of chain-formation that is distinct from the operation Move. Chain formation is taken to be an "everywhere" operation that applies to two elements in a derivation as soon as it can. Features are transmitted upwards link-by-link, in a derivational manner.
Whenever a chain-link is formed between two elements, those features that are not present on the higher element are transmitted from the lower member of the chain-link. Finally, we follow Chomsky 1995:287 by assuming that the interpretability of features is not inherent but depends on the nature of the particular item the features are associated with. Specifically, as we will see in the subsequent discussion, phi-features, even though interpretable on a regular DP are [-interpretable] on an expletive. These assumptions are outlined in the summary below:
Assumptions:

(i) there has simply a D [+interpretable] feature
(ii) chain-links can be formed independently of movement between terms that are coindexed and in a local relation
(iii) Feature-transmission is a concomitant of the formation of chain-links
(iv) the interpretability of features is not inherent but depends on what particular term the features are associated with.

To be more specific, our assumption with respect to feature transmission is the one in (34):

(34) Feature Transmission
In a link \(<\alpha, \beta>\) a feature \(F\) of \(\beta\) is transmitted to \(\alpha\) iff \(\alpha\) is not specified for \(F\).

This combines with an independently needed (but hardly ever explicitly stated) assumption about feature checking:

(35) Feature Checking
Iff a feature alpha is checked off at one member of a link, it is also checked off at the other member.

Note that without (35), movement could never create converging derivations to start with because the features of the moved copy would be able to check, but not the ones on the original in its base-position.

In the discussion that follows, we will demonstrate how these assumptions allow an account of the difference between SECs and ERCs in English.

3.2 Accounting for the difference between SECs and ERCs
Consider SECs first. The relevant examples are repeated below, illustrating the binding, NPI licensing, WCO, and control properties of the associate:

(36) a. There arrived three defendants during each other's trials
b. There appeared no solutions to this problem in the journal in any theory
c. There arrived someone\(_i\) at the party without his\(_i\) wife's approval.
d. There arrived three men last night without identifying themselves.

In our analysis there is no covert associate raising. Rather, a chain-link 
<there_j, associate_j> is formed as soon as the expletive is merged into the 
structure. Once this link is established, the phi- and Case-features of the 
associate are transmitted in that link to the expletive which does not bear any 
of these features by itself. The expletive then is able to check agreement and 
Case of the inflected verb. Once the features are checked on one member of 
the link, they count as checked on the other member of the link, according to 
(35) above.

Given that analysis, it is clear why the associate behaves as if it were in 
subject position: Its relevant features (in particular the phi-features) are 
present on the expletive after feature transmission. From the position of the 
expletive they can function as binders, controllers and NPI-licensors. In 
addition, the expletive is able to serve as an A-binder for the pronoun in (36c), 
obviating WCO effects.

With respect to SECs, then, our analysis is empirically 
indistinguishable from a Move-F analysis where the features of the associate 
raise covertly. Both analyses result in the features of the associate being 
available at the position of the expletive for syntactic processes such as 
checking, binding, control etc.

Turning now to the ERCs, our analysis makes predictions that are 
different from those of a Move-F analysis. Consider the relevant examples 
repeated below that illustrate the binding, NPI licensing, WCO, and control 
properties of the associate in ERCs:

(37) a. *There seem to each other to have been many linguists given good 
job offers.
b. *There seem to any philosophers to have been no good linguistic 
theories formulated.
c. *There seems to his_j lawyer to have been some defendant_i at the 
scene
d. *There were believed after identifying themselves to have been 
three men at the scene.

(cf. Three men were believed after identifying themselves to have been at the 
scene.)
A Move-F analysis is confronted with a serious problem now: How is it that the raised features of the associate in ERCs are available for feature checking at the overt position of the expletive, but not for binding, control etc.?

In a derivational analysis involving the formation of chain links as we suggest it here, the necessary distinction can be made. The crucial difference between ERCs and SECs is that the former involve the formation of two links: first, a link between the associate and the expletive is established as soon as the expletive is merged: \(<\text{there}_1, \text{associate}_2>\). This link does not differ in any way from the link established in an SEC: phi- and Case-features of the associate are transmitted to the expletive. The situation is different with respect to the formation of the second link in an ERC, though: The expletive \(<\text{there}_2, \text{there}_1>\) is formed. This link does not involve feature-transmission: Here it is a real copy-and-move process that takes the term \(<\text{there}_2>\) and all the features that are present at that term and moves it up to the matrix subject position. This process is blind as to the original source of the Case- and phi-features of \(<\text{there}_1>\); the information that these features originate from the associate is lost in the link \(<\text{there}_2, \text{there}_1>\). According to (35), the features will count as checked in the link \(<\text{there}_1, \text{there}_1>\) and (recursively) also in the link \(<\text{there}_2, \text{associate}_1>\). The features will not be able to establish binding, control or other dependencies from the position of the overt expletive, however: the overt expletive, being semantically empty, cannot establish these relations by itself, and the information that the features it has acquired are transmitted from a full DP associate is lost in the link \(<\text{there}_2, \text{there}_1>\).

In conclusion, our analysis of expletive constructions which relies on the derivational formation of chain links rather than on covert feature movement can account for the systematic difference between ERCs and SECs. In the former, the expletive's acquired features cannot be "traced back" to the associate within one chain-link because the expletive itself has moved. In the latter, there is only one link \(<\text{there}_2, \text{associate}_1>\) within which the origin of the transmitted features is recoverable. As long as the features of the associate can be traced back to their source within one link, they can function as binders, controllers and NPI licensors. If they can be traced back only to another copy of
the expletive as in ERCs, they can’t bind, control, or license in lieu of the associate.

4. The surface position of the associate: short movement
In this section we turn to a different problem for Chomsky’s analysis, namely the surface position of the associate. Before we introduce the problem, we have to have a closer look at the contrast in (38), and the explanation that Chomsky provides for that contrast:

(38)   a. There is likely t to be someone in the garden
       b. *There is likely someone to be t in the garden
       c. Someone is likely t to be t in the garden

(38a) is an example of an ERC, the expletive raises from the embedded subject position to the matrix subject position, the associate stays in situ. (38b) shows that it is impossible to have the associate raise to the embedded subject position, and the expletive merged in the matrix. (38c) arises from a different numeration, where there is no expletive. In (38c) the DP someone raises successive cyclically from its base-position first to the embedded and then to the matrix subject position. Chomsky’s account for the difference between (38a) and (38b) is based on economy considerations. (38a-b) arise from the same numerations, hence they compete for most economical derivation. The important steps of these derivations (where the merging and moving of there and someone are concerned) are illustrated below:

```
Merge someone:
[someone in the garden]
choice between merging there or moving someone:
  Merge there --> Move someone -->
  [there to be someone in the garden] [someone to be t in the garden]
  Move there --> Merge there -->
  (38a)                      (38b)
```

On the basis of these derivations, (38b) can be ruled out by Procrastinate. At the point of the derivation where a choice arises of whether to merge there in the embedded subject position or move someone to the embedded subject
position, the choice is determined by Procrastinate: Merger is more economical than Move, hence the derivation of (38a) wins out over that in (38b).

This very simple and elegant analysis runs into trouble, though, when confronted with a different paradigm:

(39)  a. *There is likely to be killed someone
       b. There is likely to be someone killed
       c. *There is likely someone to be killed
       d. Someone is likely to be killed

In (39), (a), (b), and (c) compete for most economical derivation, because they all arise from the same numeration. As in (38c) above, (39d) arises from a different numeration that does not contain the expletive. Strangely enough, here it seems as if someone has to raise at least one step, to a position before the participle, as it does in (39b). If someone does not raise at all, as in (39a), the derivation is out. If it raises further than the preparticipial position as in (39c), the derivation is also out. In the construction in (39), someone has to raise exactly one step, to a preparticipial position, but not a single step further. Applying the economy argument to this set of examples yields the wrong result now: by the same line of reasoning applied to (38) above, there should be merged as early as possible in the derivation. In other words, when it comes to a decision as to how to fill the preparticipial position, Merger of there should be the more economical candidate, compared to the less economical Move of someone. Procrastinate predicts, contrary to fact, that (39a) is the most economical derivation. Procrastinate correctly predicts, however, that (39c) cannot win out in terms of economy: in (39c) someone is moved from the preparticipial position to the embedded subject position, and there is not merged until the end of the derivation, clearly a less economical derivation than (39a) or (b).

The question as it stands now is: Why is (39b) grammatical when it is less economical than (39a)? The answer to this question is forced upon us by Minimalist considerations: the reason can only be that (39a) and (39b) do not actually compete for economy. This situation could stem from two possible causes: either (39a-b) arise from different numerations, or the derivation in (39a) does not converge. The first possibility is unlikely, when after all (39a-b)
contain the same lexical items and are obviously structurally so similar that there does not seem to be any reason to assume two different numerations for them. The second possibility is a more likely one: if the derivation in (39a) does not even converge, it will never compete with the derivation of (39b) for economy. What could cause a crash of the derivation in (39a), then? Again, within the Minimalist Program, the choice of possible causes is limited: basically, we have to assume that some unchecked feature leads to a crash. As a first approximation, one could assume that there is a preparticipial position with an agreement feature that needs to be checked overtly. Furthermore, in the derivation of (39a), this feature for some reason cannot be checked by there. This latter assumption is necessary, otherwise it would still be unclear why early Merger of there leads to a crash.

Thus the problem that (39) poses for Chomsky's analysis can be circumvented under two assumptions⁴:

(i) there is a preparticipial position where a feature needs to be checked overtly
(ii) only someone can check that feature, but not the expletive there

Two questions need to be answered, then:
(a) what is the feature that needs to be checked overtly in a preparticipial position?
(b) why can only the associate DP someone check that feature, and not the expletive there?

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⁴ The same sort of problem, with the same solution, is posed in existential sentences containing a progressive verb form:

(i) *there was arriving a man
(ii) *there was a man arriving

Again, we may presume that the participle is preceded by some functional projection with strong features requiring checking by overt movement, although the cross-linguistic justification for this assumption is less well-motivated, since Romance languages do not typically have agreeing progressive participial forms. We must be careful in this case, however, to distinguish the sentences in (i)-(ii) in which the progressive is the matrix verb from those in which it heads a reduced relative or a control adjunct. The latter types do not show the restriction to be and unaccusatives:
With respect to question (a), let us assume that there is a preparticipial agreement projection associated with the passive participle in English much like the one proposed for Romance by Kayne (1989), which contains an agreement feature in need of checking in its specifier. Consider now the derivations of (40a-c) (= (39a-c)):

\[
\begin{align*}
(40) & \quad \text{a. } *\text{There is likely to be killed someone} \\
& \qquad \text{b. There is likely to be someone killed} \\
& \qquad \text{c. } *\text{There is likely someone to be killed}
\end{align*}
\]

In (40a) the associate is merged into its base-position, and the expletive is merged into the preparticipial position. A link \(<\text{there, associate}>\) is formed, the phi- and Case-features of the associate are transmitted to the expletive. The expletive can check the agreement features of the preparticipial projection, and so far the derivation is fine, taking the form in (41).

\[
(41) \quad \left[_{\text{AGR}} \text{there}_1 \text{AGR } \left[_{\text{VP}} \text{ killed someone}_1 \right] \right]
\]

Note, however, that the phi-features transmitted from the associate are [-interpretable] on the expletive, because of its lack of semantic content. The consequence of this is that the phi-features acquired by the expletive will delete once they are checked. This leads to a crash in the further derivation of (40a): having its phi-features deleted, the expletive is not able to check the agreement features of the tensed matrix verb. The derivation crashes due to unchecked features, and the derivation of (40a) crucially will not compete for most economical derivation.

The derivation of (40b), on the other hand, is perfectly fine under our assumptions. The associate is merged in its base-position, and then raised to the preparticipial position. There it checks the agreement features of the functional head. As a next step, the expletive is merged and subsequently moved to its overt position. The checking of the associate's Case- and phi-features is possible through feature transmission in the link \(<\text{there, associate}>\) and copying of the expletive's features in the second link \(<\text{there, }

(iii) there was a man eating ice cream on the corner
there>, where the features can finally be checked under agreement with the
tensed matrix verb.

The derivation of (40c) involves movement of the associate first to the
preparticipial position and then to the subject position of the infinitival. It
converges, but it competes with the more economical derivation of (40b),
which wins out because of Procrastinate.

Still unanswered is the question why the preparticipial feature has to
be checked overtly. A simple answer would be to assume that it is a strong
feature. This, however, cannot be right. If the preparticipial feature were
strong, then we would expect to see short movement in any construction
involving a passive participle. This is clearly not the case, however.
Consider the following locative inversion sentences.

(42)  a. In the garden had been dug a hole.
      b. *In the garden had been a hole dug.
      c. Into the room was dragged a heavy trunk.
      d. *Into the room was a heavy trunk dragged.

So it seems that we must assume that the AGR feature is weak, and must seek
a different motivation for the overt movement. The explanation we will
give will be based on the assumption that overt movement in passive
participle constructions is not forced by the presence of strong features, and
hence we will not see it in locative inversion examples like those in (42), but
in expletive subject constructions, independent considerations ensure that
the derivation which includes short movement is the most economical
convergent derivation:

(43)  a. *There had been dug a hole in the garden
      b. There had been a hole dug in the garden
      c. *There had been dragged a heavy trunk into the room
      d. There had been a heavy trunk dragged into the room

First let us examine the derivation of a locative inversion construction like
(42a,c). We want to ensure that the features of the proposed preparticipial
agreement projection can be checked in such constructions without the short
movement we see with expletive subjects in (43). To do this, we will adopt in
large part the account of locative inversion given by Hoekstra and Mulder (1990). They suggest that the locative originates as the predicate of a small clause, which takes the agreeing DP as its subject. Thus the structure of (42a) above is as in (44).

\[(44) \text{ [IP [PP in the garden]] had been [VP dug [SC a hole t1]]]}\]

The agreement shown between the DP a hole and the matrix verb is accounted for by virtue of the predication relation between the DP and its small clausal predicate. Translating H&M's account into our terms, we would say that chain-formation takes place unifying the DP a hole and the PP in the garden as a link. This enables the phi-features of the DP to be shared by the PP, which is free to move to the matrix subject position, where it can check agreement with the verb.

Now, according to the previous discussion, (42a) must also contain an AGR projection dominating the participial VP. How are the features of this AGR-head checked? One possibility is that they are checked by movement of the locative phrase through this position. This would mean that the locative phrase must check agreement in both the participial AGR phrase and the matrix AGR. We specifically rejected that possibility for the expletive subject above, because, we claim, the shared phi-features of the associate DP are [-interpretable] on the expletive. We will reject this account here for the same reason. Because the locative phrase acquires its phi-features derivationally through chain formation and is not itself referential, we assume that the phi-features are [-interpretable] when borne by the locative, just as they are when borne by the expletive. Thus the locative phrase cannot check both the participial AGR and the matrix AGR.

Instead, we will suggest that the participial agreement features are checked covertly, by Move-F of the phi-features of the DP subject of the small clause. So the structure of a locative inversion with passive participle such as (42a) above is as shown:

\[(45) \text{ [In the garden] had been [AGR FF(a hole) AGR [VP dug [[a hole] t1]]]}\]

The question now becomes, if covert checking of AGR is possible in locative inversion, why is it not possible in the expletive subject constructions? The
answer has crucially to do with case. Recall that in expletive constructions the associate DP shares not just its phi-features but also its case features with the expletive via chain formation. Thus when the expletive reaches the subject position it can check both the case and phi-features of the chain <there, associate>. However, we suspect that this is not the case in locative inversion constructions.

Suppose that an inverted locative differs from an expletive in that the locative cannot bear case features, even when in a chain-link with a case feature-bearing term, perhaps because it is not categorically a DP, or, following den Dikken and Næss 1993, because of its status as a predicate. Some evidence that locative inversions do not check case the same way as expletives comes from ECM constructions, which cannot involve locative inversion (see (46b)) unless there is further movement, as noted in Bresnan 1990:

(46) a. I expect there to be a portrait of our founder hung on this wall  
   b. I expect on this wall to be hung a portrait of our founder  
   c. On this wall I expect t to be hung a portrait of our founder

Note also that locative inversion is ill-formed in ACC-ing constructions, which arguably involve a case-marked but non-agreeing position:

(47) a. There having been a bridge built over the river, we were able to cross.  
   b. *Over the river having been built a bridge, we were able to cross.

If case is not a property of the locative phrase, it can therefore only check the matrix agreement features, and not the nominative case feature of T. That case feature must be checked by the DP subject, covertly via Move-F. Given these assumptions, the difference between the locative inversion and expletive constructions falls out if we assume the following property to hold of the computational system (see Chomsky 1995, Gamon 1996):

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5 See den Dikken and Næss 1993 for a possible account of why this might be.
(48) A term X is accessible to the computational system only as long as X bears features, which are [-interpretable].

Consider again an expletive sentence such as (49) in light of principle (48).

(49) a. There had been a heavy trunk dragged into the room.
    b. *There had been dragged a heavy trunk into the room.

We would like to try to rescue sentence (49b) by appealing to covert raising of the (features of the) associate a heavy trunk to the participial AGR node. However, this is impossible because feature sharing between the associate and the expletive has resulted in the expletive checking both the case and phi-features of the associate in subject position. The associate therefore no longer bears any [-interpretable] features after Spellout, and is "frozen" in place, according to (48). We have also seen for example (40a) above that (49b) can not be derived by means of the expletive checking the phi-features of both the participial and the matrix agreement. That leaves (49a), with Procrastination-violating short movement, as the most economical converging derivation.

Additional support for this analysis comes from certain facts regarding the interaction of locative inversion and expletive subjects. As discussed above, short movement is ill-formed with locative inversion but required with expletive subjects:

(50) a. There had been a bridge built over the river
    b. *There had been built a bridge over the river
    b. *Over the river had been a bridge built
    d. Over the river had been built a bridge

This fact argues against an analysis like Hoekstra and Mulder’s (1990) which characterizes expletive subjects and inverted locatives as slightly different instances of a single phenomenon. But what are we to make of (51)?

(51) a. Over the river there had been a bridge built.
    b. Over the river there had been built a bridge.
Both of these sentences are by and large acceptable (although perhaps to varying degrees for varying speakers). Sentence (51a) patterns with expletive constructions in having the associate in pre-participial position and is consistent with an analysis in which the PP *over the river* is some kind of topicalized phrase, and not an inverted locative. But while (51b) patterns with locative inversion in having the associate in post-participial position, do we really wish to say that it is a locative inversion construction when it clearly contains an expletive subject? In fact the answer we will give in the next section is that (51b) is an instance of both locative inversion and expletive subject, and is hence an example in English of a multiple subject construction (MSC). In the next section we will discuss the evidence for this claim and its implications for the view of feature checking proposed here. In short, we will suggest that in such constructions, the inverted locative moves to Spec-AgrS (and therefore checks agreement, but not case, for the associate), while the expletive subject occupies Spec-TP (and therefore checks case, but not agreement, for the associate). Thus such sentences demonstrate exactly the difference between expletive subjects and inverted locatives that we have suggested above.

5. Multiple Subject Constructions in English

5.1 Evidence for MSCs in English

We claim that in the English sentence (52) there is both an expletive occupying a subject position and an inverted locative which has moved to a second subject position. Therefore (52) is an example of a Multiple Subject Construction (MSC) in English:

(52) Over the river there had been built a bridge.

Sentences in which there seem to be two overtly occupied VP-external subject positions have been attested in several Germanic languages, with the best known perhaps being the Transitive Expletive Construction (TEC) in Icelandic analyzed by Jonas and Bobaljik (1993), Bobaljik and Jonas (1996), exemplified in (53).
(53) tað mundu einhverjir batar hafa verið keyptir
    there would some boats have been bought
    'There would have been some boats bought.'

Jonas and Bobaljik claim that both tað and einhverjir batar are in VP-external positions. The evidence for this claim comes from sentences like (54), where the negative term ekki is taken to be a diagnostic for the left edge of VP:

(54) tað þorðuðu margir strákar bjúgunj [vp ekki [vp t1 (öll) t1 ]
    there ate many boys the-sausages not (all)
    'Many boys didn't eat (all of) the sausages'

Jonas and Bobaljik suggest the following structure for such sentences, where the expletive subject tað occupies Spec-AGRS and margir strákar Spec-TP.

(55) [AgrSP tað þorðuðu [TP margir strákar [AgrOP bjúgunj [vp ekki [vp t1 (öll) t1 ]

Before we discuss the structure of the putative English MSCs, let us examine some evidence that sentences like (52) actually involve locative inversion in addition to the expletive subject. First note that, in accord with H&M's analysis, locative inversion is possible only when the inverted locative can plausibly originate as the predicate of a small clause of which the postverbal DP is the subject. In the best non-copula examples of locative inversion the small clause predicate expresses the result state/location that the DP reaches by undergoing the action of the verb, as in the examples adduced above, repeated here:

(56) a. Into the room was dragged a heavy trunk
    b. In the garden was dug a hole
    c. Over the river was built a bridge

Locative inversions are less well formed when the PP cannot plausibly be a small clause predicate of the DP:
(57) a. ??In the park was killed a man yesterday
    b. ??Under the bridge was kissed a frog by a maiden
    c. ??In a galaxy far away was fought a war

Likewise, (56a-c) are equally marginal when inserted into our putative MSCs:

(58) a. ??In the park there was killed a man yesterday
    b. ??Under the bridge there was kissed a frog by a maiden
    c. ??In a galaxy far away there was fought a war

Contrast (58) with (59), in which the locative PP is a mere IP-adjoined (perhaps topicalized) adverbial:

(59) a. In the park there was a man killed yesterday
    b. Under the bridge there was a frog kissed by a maiden
    c. In a galaxy far away there was a war fought

Second, it has been observed that locative inversion sentences typically resist negation:

(60) Over this river was(*n't) built a bridge

The MSC sentences similarly resist negation, while their counterparts with short movement are more acceptable:

(61) a. *Over this river there wasn't built a bridge (until 1937)
    b. Over this river there wasn't a bridge built (until 1937)
    c. *On this wall there has never been hung a picture
    d. On this wall there has never been a picture hung

The above sets of facts suggest that sentences like (52) are indeed instances of both expletive subject and locative inversion. Certain additional facts regarding extraction are somewhat less clear, however, as discussed in the next section.
5.2 MSCs and Extraction

First, note that extraction from the postverbal subject of an inverted predicate is typically ill-formed (62b), but not from the postverbal associate of an expletive (62a):

(62)  a. Which politician do you think that there was a picture of hung on the wall?
    b. *Which politician do you think that the cause of the riot was a picture of?

If there is truly locative inversion in (51b) (=52)) but not in (51a), then we should expect a contrast similar to that in (62) to show up when we try to extract a wh-phrase from the associate in such constructions. However, extraction from the associate is uniformly bad in both types of sentences corresponding to (51):

(63)  a. ??Which politician do you think that on the wall there had been a picture of hung?
    b. ??Which politician do you think that on the wall there had been hung a picture of?

However, there are independent reasons why both sentences in (63) should be ill-formed. The ill-formedness of (63a) is expected if the locative is a topicalized phrase, because extraction across topicalization is disallowed generally in English:

(64)  *Which books do you think that on that table Mary put?

As for (63b), there is also evidence that locative inversion always involves A-movement followed by obligatory topicalization. This means that the inverted locative passes through, but does not remain in, an A-position, but rather continues its movement to topicalized position. Some evidence for this comes from the sentences in Bresnan (1990) discussed briefly above,
which show that an inverted locative is ill-formed as an ECM subject unless it undergoes further A'-movement\textsuperscript{6}:

(65)  
\begin{itemize}
  \item *I expect on this wall to be hung a portrait of our founder
  \item On this wall I expect to be hung a portrait of our founder
\end{itemize}

In addition, adjunct extraction across an inverted locative is ill-formed\textsuperscript{7} (den Dikken and Næss 1993), suggesting again that the locative is in topicalized position:

(66)  
*How fast/at what speed do you think that down the hill came rolling the baby carriage?

So it seems that both varieties of sentence in (51) exhibit the behavior of topicalization, although perhaps for different reasons, and so the contrast shown in (62) cannot be used as a diagnostic for the putative MSC. If, however, we control for topicalization by changing the locative to an inverted negative, across which extraction is allowed, as shown in (67), then the contrast in (51) should emerge. However, as (68) shows, there does not seem to be a significant contrast between the two types of sentence even in the context of negative inversion.

(67)  
On which table did Mary say that only these books would she put?

\textsuperscript{6} The sentences in (62), of course, can be taken as further evidence that locative inversion and expletive subjects are not the same phenomenon, since expletive there is perfectly well-formed as ECM subject:

(i) I expect there to be a portrait of our founder hung on this wall.

\textsuperscript{7} Den Dikken and Næss (1993) cite examples like (i-ii) (from H&M 1990) as potential counter-examples to this generalization. We will follow them, however, in the speculation that examples such as these do not involve an operator-variable relation and hence do not involve actual movement of the wh-phrase.

(i) We all witnessed how down the hill came rolling a huge baby carriage.
(68)  a. Who/Which politician do you think that on no wall will there ever be a picture of hung?
b. Who/Which politician do you think that on no wall will there ever be hung a picture of?

Neither of (68a) or (68b) is particularly well-formed, and we can discern no obvious contrast between them. There is a complicating factor here, however, which will lead us not to take this fact as evidence against the MSC analysis of (52). Note that it is possible for the associate to follow the participle in a simple expletive subject clause provided that the associate is sufficiently heavy:

(69)  There have been arrested several men fitting the police description.

We can assume that (69) involves some form of rightward movement ("heavy-NP shift") which places the associate to the right of the participle. This being the case, it is unclear whether the sentence in (68b) is actually a case of MSC or of a standard expletive subject with a topicalized locative and heavy-NP shift of the associate to the right periphery. Furthermore, an associate which is sufficiently complex to have a constituent extracted from it will presumably also be heavy enough to permit rightward movement, as we can see for our example sentence from (68).

(70)  There will never be hung on this wall a picture of a politician

So it may be all but impossible to construct an example which demonstrates the desired contrasts without the complicating factor of heavy-NP shift. Thus we will take the preceding facts regarding extraction as inconclusive, and continue to regard sentences such as (52) as examples of MSC in English, based on the evidence in (56) through (61).

(ii) We suddenly saw how into the pond jumped thousands of frogs.
5.3 A possible counter-argument: Absence of that-trace effect:
Evidence from that-trace effects seems at first to motivate against an analysis in which the inverted locative is in a subject position, because extraction of the inverted locative in these cases does not induce the effect:

(71)  
   a. [On which wall], do you think that \( t_i \) there had been hung a picture?
   b. *[On which wall], do you think that \( t_i \) had been hung a picture?

However, it is not at all clear how the that-trace effect might apply in a situation in which there is more than one preverbal subject. It is well-established that the effect is sensitive to phonological effects such that if sufficient material intervenes between that and the tensed verb, the effect disappears (Culicover 1992):

(72)  
   a. *Which politician did you say that would run for reelection?
   b. Which politician did you say that under no circumstances would run for reelection?

Perhaps the intervention of the second subject, expletive there, between the complementizer and the tensed verb similarly cancels the effect.

5.4 The Structure of English MSCs
The structure we will suggest for the English MSCs is as in (73), which is similar to the structure assumed by Bobaljik and Jonas (1996) for the Icelandic TEC, but with the locative in Spec-AgrSP and the expletive in Spec-TP.

(73)  
\[ \text{AgrSP over the river}_i [\text{TP there}_k \text{ was [PartP } t_k \text{ built [SC a bridge}_i/k \text{ } t_i]]] \]
   (i=k)

This structure implies that it is the locative which checks the matrix agreement and the expletive which checks the matrix Case. It also gives an explanation for why the associate appears after the participle in the MSC: the participial agreement features are checked by the expletive, because its duty to check the matrix agreement has been taken over by the locative. Recall that the expletive can only check agreement once in a particular clause, because the phi-features it inherits from its associate are [-interpretable]. Thus in a
sentence in which two sets of agreement features needed to be checked (AgrS and participial) it was necessary for the associate to move to check one of the sets, because the expletive could not check them both. But in (73) there are two phrases which can act as "substitute" agreement checkers, namely the expletive and the locative. Thus the associate DP need not move.

Assuming the structure given, then, we would like to be able to show that legitimate derivations arise for sentences of the type in both (74a) and (74b), and that both are possible when considered in terms of economy of derivation.

(74)  a. Over the river there was a bridge built
       b. Over the river there was built a bridge

Consider the point in the derivation at which the small clause has been assembled and merged with the verb:

(75)  α [built a bridge over the river]

There are two alternative operations that could be performed at this point which lead to converging derivations.

Alternative 1: Merge the expletive into Spec-PartP
The expletive checks Agr in SpecPartP. The result is that the [-interpretable] phi-features of the expletive are checked off. The expletive then moves to SpecTP to check Case. Only the locative can check the Agr features in SpecAgrSP, so it moves there. This is a converging derivation, with multiple subjects (74b):

(74b)  \(∵\) Over the river there was built a bridge

Alternative 2: Move the associate to Spec-PartP
The next step here is to merge the expletive in (standard) subject position, where it checks Case and agreement. The resulting sentence is (76):

(76)  \(∵\) There was a bridge built over the river.
What about the derivation of the sentence with the following word order, sentence (74a)?

(74a) "\(\Rightarrow\) Over the river there was a bridge built"

This sentence is simply a continuation of the derivation that led to (76), with topicalization of the locative. Sentence (74a) cannot converge as a Multiple Subject Construction. Suppose that we reach the point in the derivation (77), in which the expletive has merged in Spec-TP but Spec-AgrS is as yet unoccupied.

(77) \([\text{AgrP} \text{ AGR} [\text{TP} \text{ there was a bridge built over the river}]]\)

Here the expletive bears unchecked [-interpretable] features, namely the phi-features it has borrowed via feature transmission form the associate. Now if the locative moves to Spec-AgrS to check matrix agreement, the phi-features of the expletive will remain unchecked, resulting in a crash. This is because the expletive has entered into a chain with the associate, but not with the locative, although all three bear the same index. In effect what we have are two distinct chains: the expletive associate chain formed via the everywhere character of chain formation, and the predication chain linking the associate and the locative. Since the phi-features of the expletive will remain unchecked, the derivation crashes as an MSC. Thus the well-formedness of sentences with similar word order like (59), repeated here, in which the locative does not arise as the predicate of a small clause, and which thus are not MSCs:

(59) a. In the park there was a man killed yesterday  
    b. Under the bridge there was a frog kissed by a maiden  
    c. In a galaxy far away there was a war fought

To summarize at this point, under our assumptions there are three converging derivations involving a passive, an expletive, and a locative. These three converging derivations lead to the surface word orders shown below, via the derivations given in the table:
(i) Over the river there had been built a bridge
(ii) There had been a bridge built over the river
(iii) Over the river there had been a bridge built

<table>
<thead>
<tr>
<th>(i) Over the river there had been built a bridge</th>
<th>(ii) There had been a bridge built over the river</th>
<th>(iii) Over the river there had been a bridge built</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merge expl in SpecPartP</td>
<td>Move associate to SpecPartP</td>
<td>Move associate to SpecPartP</td>
</tr>
<tr>
<td>Move expl to SpecTP</td>
<td>Merge expl in SpecAgrSP/TP</td>
<td>Merge expl in SpecAgrSP/TP</td>
</tr>
<tr>
<td>Move loc to SpecAgrSP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Move loc to topic position</td>
<td>Move loc to topic position</td>
<td></td>
</tr>
</tbody>
</table>

Let us now turn briefly to questions of economy. First, let us assume that the additional topicalization step that seems to be involved in (i) and (iii) is motivated by some feature present in the numeration, and so (i) and (iii) have different numerations than does (ii). Thus questions of relative economy apply only to (i) and (iii).

The chief question concerns the point at which the derivations diverge: the first step in the table, where derivation (i) has merger of the expletive, and (iii) has movement of the associate. Chomsky (1995) has suggested that merger is essentially a costless operation, and thus the movement of the associate in (iii) should be a less economical step at this point, as discussed above for examples like (38a-b), repeated here.

(38)  a. There is likely t to be someone in the garden

---

8 Actually, it is not at all clear that the same numeration is involved in even the derivations in (i) and (iii). If, as discussed above, the only legitimate derivation for (iii) involves topicalization of the locative, then it is possible that the numeration of (iii) includes some additional lexical item/feature bundle motivating this movement. Furthermore, if locative inversion involves obligatory topicalization, as discussed in section 5.2, then it is also possible that the numeration of (i) reflects this fact, i.e. it does not involve a topicalization feature per se, because the obligatory topicalization is motivated independently, perhaps for case-checking reasons (see den Dikken and Næss 1993). In any case, if different numerations are involved for all three sentences, the economy problem discussed immediately below simply does not arise.
b. *There is likely someone to be t in the garden

Under this assumption, then, derivation (i) should thus block derivation (iii). In order to address this problem, consider however that at this point in the derivation, neither of these operations, merge or move, is locally necessary. Recall from the previous discussion that we assume there is no strong feature in PartP, but rather the overt movement to this position we see in sentences like (74a) is forced by the need for a converging derivation: as we have shown in the discussion above, no converging derivation could be obtained if nothing is moved or merged into SpecPartP. Thus the most economical option of all— to do nothing— is barred. We would like to suggest, then, that local comparisons of economy are relevant only in the context of locally necessary operations—that is, when the operation is forced by local necessity, e.g. the presence of a strong feature. This move also introduces some possible consequences for optional movement phenomena, the full consideration of which we must leave for further research. Given this assumption, the first steps in the derivation of (i) and (iii) are equally economical.

Further comparisons of economy among these derivations seems to be irrelevant—from the point at which the derivations diverge, the target of each succeeding operation in the two derivations is different.

To summarize, we have shown that under our assumptions there are exactly three converging derivations arising from the initial numeration involving a locative small clause, a participial main verb and an expletive. One of the derivations involves locative inversion and is a multiple subject construction. Under the additional assumption that local economy comparisons are restricted to derivational steps that involve local necessity, all three derivations end up being equally economical. It also follows in our analysis that the Multiple Subject Construction allows for postparticipial placement of the associate, while the regular expletive construction requires short movement of the associate.

6. Open issues
Here we will briefly discuss some of the theoretical implications of our analysis and some open issues.

First, in our analysis, overt movement to a preparticipial position is not forced by a strong feature, but by the need for a converging derivation. In
other words, overt movement in general can be due to other factors than the presence of strong features. Though we have not explored this assumption further, it could be potentially interesting for the analysis of other cases of seemingly "optional" movement.

Second, note that our analysis points to an interesting difference between movement/merger of an expletive in subject position and movement of a full DP to that position: in our system, a full DP has to move to a single subject position, created by movement of T to Agr. Successive movement to SpecTP and subsequently to SpecAgrSP is not licit for full DPs: their [-interpretable] Case feature would be checked off in SpecTP, depriving them of their only [-interpretable] feature and freezing them in place, with the AgrS feature going unchecked and leading to a crash. For the expletive, however, both Phi-features and Case-features are [-interpretable], so that it has the option of moving to subject position in two steps.

Third, the Multiple Subject Constructions in English considered here present a direct challenge to the contention by Bures (1992), as extended by Bobaljik and Jonas (1996), that the availability of Spec-TP as an overt checking position in a language correlates positively with the possibility of overt NP Object Shift in that language. That contention is based on the observation known as Bures's correlation:

(78) Bures's Correlation
Within Germanic, the languages that allow NP Object Shift are those languages that also allow Transitive Expletive Constructions

If the analysis here is correct, then Spec-TP seems to be licensed as an overt subject position in a language (English) that does not have overt object shift. The observation in (78) remains intact, as English lacks TECs, but it seems that OS is not a direct consequence of the availability of Spec-TP under some circumstances.

Finally, consider the question of cross-linguistic variation in the behavior of expletives, in particular the behavior of French *il*. Recall from the discussion of Chomsky's 1995 analysis of expletives in section 1 that a question arises from his assumptions about the feature content of *il*. Chomsky claims (1995:274) that "in French, with the full NP expletive *il* analogous to English *it*, the LF operation (Move-
associate--G&L) is barred, all features of the matrix I-phrase, the potential target, having already been checked by the expletive. Accordingly there is no covert raising, hence no binding or control."

The problem with this claim that we identified earlier is this: if French *il* bears Case-features, we expect that in a regular expletive construction in French the associate would end up with unchecked [-interpretable] Case-features⁹. It is clear, however, that *il* should be different in its properties from English *there*--after all in French the verb agrees with the expletive and not with the associate and the previously discussed control data indicate that this correlates with the associate not being able to control from the position of the expletive. We would like to suggest here that the French expletive *il* is of category D and bears phi-features but not Case-features.

The result, then, is that in a chain link <il, associate> the only feature that is transmitted from the associate to the expletive is the Case-feature of the associate. Case is then checked for the whole chain by the expletive. Phi-features, however, are lexically present on both expletive *il* and the associate, hence they are not transmitted from the associate to the expletive. If we assume that it is the position of the phi-features of a DP that is relevant for the establishment of control properties, the French associate will not behave as if it were in subject position for the purpose of control--a prediction that is borne out by the data.

A final question that is in need of answering is whether the phi-features of *il* should count as [-interpretable], like the English expletive, or as [+interpretable]. If we assume the former, we would expect that the French expletive, like its English counterpart, can only establish agreement once because its phi-features will be checked off after this step, and won't be available for any further agreement checking. This does not seem to be correct, though: consider the French example (79) below.

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⁹ This problem does not arise, of course, if we assume the availability of some other case-checking mechanism for the associate, such as the partitive case account suggested in Belletti 1988. However, since it is possible to give an account of English expletives without recourse to such a mechanism, we would like to pursue an account of French which similarly sticks to minimal assumptions.
(79) Il est entré trois hommes
       It is3sg entered3sg masc three men
       "three men have entered"

In (79), both the participle and the finite verb est appear to agree with the expletive, and not with the associate. We might consider the possibility, however, that the participle simply shows a "default" agreement, and in fact agrees with the associate covertly. After all, as Kayne (1989) observes, certain French past participles agree with a postverbal argument only when that argument has been moved to the left of the participle (see also Chomsky 1991 for discussion):

(80)   a. Paul a repeint/*repeintes les chaises.
       Paul has repainted the chairs
   b. Paul les a *repeint/repeintes.
       Paul them has repainted
   c. les chaises que Paul a *repeint/repeintes
       the chairs which Paul has repainted

The generalization seems to be that agreement shows up morphologically only when the argument moves overtly through the participial Spec-Agr. So perhaps (79) is analogous to (80a), in which there is reason to believe the agreement is covert. Unfortunately, this cannot be the case. In the context of an expletive subject, the passive participle shows no agreement with the associate even when the associate has moved to the left of the verb:

(81)   a. Il sera repeint beaucoup de chaises cette année
       It will-be repainted many of chairs this year
   b. Je me demande combien de chaises il sera repeint(*es) cette année
       I wonder how many of chairs it will-be repainted this year
       (Kayne 1989)

So it appears that both the finite verb and the participle actually agree with the expletive il in (79). If both these agreement relations with the expletive subject are mediated by functional projections and checking, we are forced to assume that il bears [+interpretable] phi-features, otherwise it would only be
able to check one of them. The problem is even more pointed when we consider the passive existentials, which we showed required overt short movement of the associate in English. In their French counterparts, short movement is not required, and the participle agrees with the expletive:

(82) Il a été mangé une pomme
    It has been3sg eaten3sg masc an apple fem

Here we would have to assume that the expletive checks the pre-participial agreement which we specifically denied it could check in English, forcing us to the conclusion that the phi-features of the French expletive are [+interpretable]. This conclusion is problematic, however, if, as we have claimed above, the interpretability of features depends on the semantics of the category that the features are associated with, in particular with the referentiality of that category.

To deal with this problem, we can only suggest at this stage that interpretability of features may be linked not to the referentiality of the category bearing the features, but rather to whether or not the category bears the features inherently. Under this view, features which are borne by a category via feature transmission (like the phi-features of there) are [-interpretable], regardless of whether those features are [+interpretable] or [-interpretable] originally. Phi-features which are inherently borne by a term, such as in the case of il, will be [+interpretable]. The problem with this assumption is that the interpretability of features should properly depend on the semantics of the category that the features are associated with. Otherwise "interpretability" loses its meaning and becomes an arbitrary feature used to distinguish features that disappear after checking from those that don't. Therefore it would be preferable to have an alternate account of the French agreement facts which does not lead us into this quandary. We will leave the search for such an account aside for future research.

7. Conclusion

In this paper we have shown that a derivational chain formation account of expletive constructions in English leads us to answers for certain mysteries surrounding two questions: (i) what is the LF position of the associate of the expletive, and (ii) what is the surface position of the associate.
In particular, the chain formation analysis could account for why the associate behaves as if it raises to the position of the expletive in simple expletive constructions but not in expletive raising constructions. It could also account for the mysterious pre-participial position of the associate in passive existentials. Finally, we have discussed certain English constructions which seem to involve more than one overtly filled subject position, and we have shown that the analysis developed here provides an analysis of the structure and behavior of these constructions.

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1. Introduction

There are two means of expressing the benefactive function in Korean. One is to attach an adverbial phrase, either -ul wiha-ye ‘for, in the favor of’ or -ttaymwun-ey ‘for the sake of’, after a beneficiary NP as shown in example (1) that follows. The other is to attach a benefactive verbal form -e cwuta\(^1\) ‘do something for someone’ ((lit.) ‘give (the benefit of)’ after not-final verb(s) as shown in (2) and thereafter. The first goal of this paper is to investigate the changes in syntactic and argument structure that occurs in the process of grammaticalizing the donatory verb ‘give’ to the benefactive auxiliary verb in the -e cwuta construction. The second goal is to account for the licensing in both donatory and benefactive verbal construction.

(1) Phrasal Benefactive Verbal Construction in Korean

<table>
<thead>
<tr>
<th>Mary-ka</th>
<th>John-ul wiha-ye chayk-ul</th>
<th>sa-ss-ta</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Nom</td>
<td>-Ben</td>
<td>book-Acc buy-past-Dec</td>
</tr>
</tbody>
</table>

‘Mary bought a book for John.’

(2) Complex Benefactive Verbal Construction in Korean

<table>
<thead>
<tr>
<th>Mary-ka</th>
<th>John-ul wiha-ye chayk-ul</th>
<th>sa-e cwu-ess-ta</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Nom</td>
<td>-Ben</td>
<td>book-Acc buy give-past-Dec</td>
</tr>
</tbody>
</table>

‘Mary bought a book for John.’

When the verb cwuta function as a main verb, it represents a donatory action of giving a certain object to a recipient NP. On the other hand, when it is attached after another verbal to form a complex benefactive verbal constructions (BVC’s hereafter) as in sentence (2), it usually represents the meaning of benefaction done for the recipient NP.

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\(^1\) This plain form -cwuta can be substituted by an honorific counterpart -tulita when the hearer is someone to be respected due to his or her social hierarchy, seniority, or other status-sensitive variables. On the other hand, when the speaker requests some kind of favor done for himself or herself, a command in either polite (cwunsegyo) or blunt (cwu) form can be used.
The donatory/benefactive constructions are very interesting because they can be interpreted in three different ways as Clause Combining Construction (CCC), Serial Verb Construction (SVC), and Verbal Clausal Construction (VCC). Let’s compare the three interpretations in (3).

(3) Mary-ka John-eykey chayk-ul (i) sa-e(se) cwu-ess-ta
    (ii) sa-e
    (iii) sa-e
         Mary-Nom John-Go book-Acc buy give-past-Dec
(i) ‘Mary bought a book and gave it to John.’ (CCC)
(ii) ‘Mary bought and gave a book to John.’ (SVC)
(iii) ‘Mary bought a book for John.’ (VCC)

The above three interpretation represent successive stages of grammaticalization. The construction represented by (3i), in which the conjunctive suffix -e(se) occurs, is not a concern of this study, as it is not a complex verbal construction. Its structure is similar to (4) where Complementizer (CM) stands for a conjunctive sentence and CM is a conjunctive marker.

(4)

In this paper, I will discuss only (3ii) and (3iii). In section 2, I will discuss the basic usage and the structural and functional characteristics of the V1 + CM cwuta construction. Section 3 is a review of previous studies paying special attention to Shibatani (1994). In section 4, an analysis about the Argument Structure (AS) change based on both structural and functional aspects of the construction is presented. Section 5 deals with argument licensing in both serial (donatory) and benefactive constructions. Section 6 is a summary and conclusion.

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2 The difference of meaning between Clause combining Construction (i) and Serial Verb Construction (ii) is crucial in this study. The former means the two actions occurring in sequence while the latter refers to the manner, i.e. Mary gave the book to John by buying it from somewhere first not by doing anything else.
2. Basic Usage, Structure and Functions

The first usage of the -e cwuta construction is for sequential donatory actions. Its meaning is ‘to do something AND give it to someone’. The second usage is a benefactive one and the meaning is ‘to do something (an action represented by non-final verb(s)) FOR someone (speaker(the first person), hearer (the second person) or a third person)’. This benefactive usage is derived from the donatory meaning of the base verb as indicated above. Consider the following:

    -Nom  -Go book-Acc buy give-Past-Dec  
    (i) ‘Mary bought and gave a book to John.’ (donatory)  
    (ii) ‘Mary bought a book for John.’ (benefactive)  

b. Mary-ka John-ykey ku sasil-ul malha-e cwu-ess-ta  
   -Nom  -Go the fact-Acc tell -CM give-Past-Dec  
   ‘Mary bought a book for John.’ (benefactive)  

c. Mary-ka apenim-kkey chayk-ul ilk-e tuly-ess-ta  
   -Nom father-Go chayk-Acc read-CM give-Past-Dec  
   ‘Mary read a book for her father.’ (benefactive)  

d. Mary-ka Johe-ykey ku sasil-ul malha-e cwu-ess-ta  
   -Nom  -Go the fact-Acc tell give-Past-Dec  
   ‘Mary bought a book for John.’ (benefactive)  

I will assume the following as an underlying D-structure of the sentence in (5).

(6)  

```
S
   NP       VP
       NP       VP
           CS       V2
               P       S1       CM
```

c. [Mary-ka apenim-kykey [Pro, yo-ul kkai] -e cwu-ess-ta]]  
d. [Mary-ka e [Pro, kucang-ul ka] -e cwu-ess-ta]]
In (6), I assume an embedded construction. In other words, the embedded S1 which contains V1 as its main verb is a subordinate sentence embedded within the main S which contains V2 as its main verb. The complementizer (CM) -e connects the embedded clause to V2.

The structural difference between (4) and (6) is very clear. Contrary to the embedded construction in (6), construction (4) is a typical example of coordination as clearly shown by the use of a coordinate conjunction -e(se) which coincidentally is identical in form with the complementizer -e after optionally omitting -se. Besides, the meanings in the two constructions are different from each other. (4) represents two separate events - buying and then giving. In contrast, sentences with benefactive meaning such as in (5) uniformly deliver one event meaning, although (3i) still retains a serial donative meaning unlike others which have only the benefactive meaning.

3. Previous studies

Previous formal approaches were not quite successful in providing a proper explanation for the benefactive construction. Aissen (1983) and Baker (1988) tried to provide a uniform and structural analysis about the inability of intransitive constructions to undergo change to benefactive constructions. However, their approaches are inappropriate in various respects. First, it is not only intransitive verbs, but a large number of transitive verbs that do not allow their clause-mate goal NP to convert to a benefactive NP. It is shown clearly in the following examples.

(7) a. Mary-ka John-eykey yo-lul kkal-e cwu-ess-ta
   -Nom   -Go matess-Acc spread give-past-Dec
   ‘Mary spread the matress for John.’

b. ?Mary-ka John-eykey yo-lul kay-e cwu-ess-ta
   -Nom   -Go matess-Acc fold give-past-Dec
   ‘Mary folded up (put away) the matress for John.’

(8) a. Mary-ka John-eykey mwun-lul yel-e cwu-ess-ta
   -Nom   -Go door-Acc open give-past-Dec
   ‘Mary opened the door for John.’

   -Nom   -Go door-Acc close give-past-Dec
   ‘Mary closed the door for John.’

(9) a. Mary-ka John-eykey kwutwu-lul takk-e cwu-ess-ta
   -Nom   -Go shoes-Acc polish give-past-Dec
   ‘Mary cleaned the shoes for John.’

   -Nom   -Go window-Acc clean give-past-Dec
   ‘Mary cleaned the windows for John.’
Even though all the (b) sentences in (7) through (8) carry a transitive verb as a main verb in a subordinate sentence as do the (a) sentences, they are not still quite acceptable. This fact proves that both Aissen’s stipulation prohibiting the Oblique to 3 advancement and Baker’s Case theoretic explanation, which predicts that intransitive verbs fail to convert to benefactives because they cannot assign Case to their object NP’s, have nothing to say about the unacceptable transitive-based benefactives. Baker’s approach is strictly restricted to only one type of benefactive construction in which the goal/beneficiary NP is realized as a direct object. More significantly, the central problem is not really concerned with the transitivity of the verb base. The grammaticality is not simply as categorical as these formal analyses suggest. Furthermore, even the same verb shows a measurable difference in the acceptability scale depending on the situation.

Among other studies, Shibatani (1994) is the most recent, comprehensive, and relevant to the topic. Insightful as it may be, his approach, the so-called ‘Construal by the Give-scheme theory’ does not explain the full spectrum of the phenomena related to the construction. Diagram (10) shows Shibatani’s basic scheme of the construction:

\[
\begin{array}{cccccc}
\text{<ag1>} & \text{th1>} & \text{<ag2>} & \text{go2} & \text{th2>} & \text{thematic structure} \\
\text{SUJ} & \text{DOJ} & \text{SUJ} & \text{IOJ} & \text{functional structure} \\
\text{NP-ka} & \text{NP-lul} & \text{NP-eykey} & \phi & \text{syntactic coding} \\
\text{Mary}_{1}\text{-ka} & \text{chayk-}ul & \text{John-eykey} & < >1 & \text{referential structure}
\end{array}
\]

It is not totally clear how Shibatani’s approach can capture some of the following crucial facts. First, the thematic structure assumed by Shibatani does not fully reflect meaning and behavior of the arguments carried by the benefactive verb (the goal meaning vs. the ‘do/be for’ meaning). Despite an identical argument valency, there is a big difference in the meaning between donatory or dative construction and benefactive construction. Second, the give-schema that derives the theory accounts for some aspects of the benefactive construction but not others. In other words, even though the schema explains some aspects of the semantics of the relevant construction, it does not tell anything about pragmatic factors that will be discussed later. Third, Shibatani’s coindexing interpretation module, especially < >1 (see(10)) in the referential structure, is unable to account adequately for the function of complement clauses because it does not distinguish between lexical argument and sentential complement. Finally, Shibatani’s approach does not fully reflect the diachronic aspect of the phenomena although he touches on it to a certain extent. In other to explain the full range of phenomena, it is indispensable for us to explain not only the synchronic but also the dynamic and diachronic aspect of them.
4. Analysis

In this section, I will present an analysis to explain various aspects of the constructions in question, including both synchronic and diachronic aspects. My analysis is two-fold. I basically claim that the constructions actually reflect different stages of an on-going gradual grammaticalization process along the cline from a full donatory or dative to a full benefactive construction. I also claim that both structural and functional factors are deeply involved in the process.

4.1. Grammaticalization in -e cvuta and Valency Differences in Argument Structure

As explained thus far, I propose that the benefactive cvuta, a so-called auxiliary verb, has been grammaticalized from the donatory cvuta, an independent verb. The grammaticalization has taken place only when cvuta occurred after a complement clause that ends in the complementizer -e which itself developed from the conjunctive suffix -e(se) ‘and then’ with the deletion of -se. Thus -e cvuta has the original ungrammaticalized meaning ‘and then give something to’ as in 94) and the grammaticalized benefactive meaning ‘give the benefactive/act of doing/being for’ as in (6). I thus claim that the donatory cvuta and the benefactive cvuta have different argument structures as in the following:

(11) a. donatory cvuta: <ag go th>
    b. benefactive cvuta: <ag(go)> [+CS]

Notice the progressive argument structure change effected as the grammaticalization gets mature. The NP theme (th) which refers to an object in the donatory cvuta no longer functions as theme in the benefactive cvuta, which instead has an obligatory complement clause (CS). Furthermore, goal (go) which is an obligatory argument in the case of the donatory cvuta becomes obsolete in the benefactive cvuta except when it is allowed under a variety of grammatical, semantic, and pragmatic conditions to be discussed in 4.2. To indicate such restrictiveness of the occurrence of <go>, I propose <ag (go)> for the argument structure of the benefactive cvuta.

As mentioned above, the grammaticalization involved in -e cvuta causes valency differences in the realization of arguments in donatory and benefactive constructions. By ‘valency differences in argument structure’, I mean the differences in argument structure between the pre-grammaticalized construction (donatory) and the grammaticalized construction (benefactive) as shown in example (12). Examples (13) through (15) illustrate only benefactive constructions. Notice in (15) which has an intransitive complement clause that even <go> is not part of the argument structure of the benefactive verb cvuta.
(12) Mary-ka John-eykey chayk-lul sa-e cwu-ess-ta
    -Nom -Go book-Acc buy give-past-Dec
    saV₁ + cwuV₂ → sa-cwutaV₁-V₂
    AS: <ag₁, th₁>V₁ + <ag₂ go₂ th₁₂>V₂ → <ag₁₂ go₂ th₁₂>V₁-V₂
    (i) 'Mary bought a book to John.'
    AS: [<ag₁ th₁>V₁]ₐ + <ag₂ go₂ th₁₂>V₂ → <ag₁₂ go₂ th₁>V₁-V₂
    (ii) 'Mary bought a book for John.'

(13) Mary-ka John-eykey kukes-lul mahlha-e cwu-ess-ta
    -Nom -Go the thing-Acc tell give-past-Dec
    mahlhaV₁ + cwuV₂ → mahlha-cwutaV₁-V₂
    AS: <ag₁, go₁ th₁>V₁ + <ag₂ go₂>V₂ → <ag₁₂ go₁₂ th₁>V₁-V₂
    'Mary told the fact to and for John.'

(14) Mary-ka apenim-kkey yo-lul kkal-e tuly-ess-ta
    -Nom father-Go mattress-Acc spread-CM give-past-Dec
    kkalV₁ + tulyV₂ → kkal-tulytaV₁-V₂
    AS: <ag₁, th₁>V₁ + <ag₂ go₂>V₂ → <ag₁₂ go₂ th₁>V₁-V₂
    'Mary spread a mattress for her father.'

(15) Mary-ka (*John-eykey) kukcang-ey ka-e cwu-ess-ta
    -Nom -Go theater-to go-CM give-past-Dec
    kaV₁ + cwuV₂ → ka-cwutaV₁-V₂
    AS: <ag₁, go₁>V₁ + <ag₂ go₂>V₂ → <ag₁₂ go₁₂>V₁-V₂
    'Mary went to the theater for John.'

Example (12) through (15) show that, in comparison with the donatory cwuta, the
benefactive cwuta has two fewer thematic roles, in that theme (th) is lacking and goal
(go) occurs restrictively. The gradual grammaticalization process affected the valency
of argument structure in the relevant verbal complex, and as a result of this gradual
grammaticalization process, the valency of V2 becomes lighter. The valency of V2 is
determined mostly by the transitivity and other properties of V1. Thus, an intransitive V1
causes V2 causes V2 to take only a single argument <ag>. V1 causes V2 to take one <ag>
or two <ag, go> argument depending on various semantic and pragmatic conditions to be
discussed in great detail later. The following generalizations can be made on the basis of
(12) through (15).

(16) a. Agent sharing (12-15)
    b. Theme sharing(12i)
c. Lack of the role of Bendfactive <go> in V₂ when V₁ lacks <th> (15).
    d. Contrast between the Goal meaning and Benefactive meaning for an
       identical goal argument ((12i)) vs. (12ii), (13-15)).
In both donatory and benefactive constructions, the agents in V1 and V2 must be referentially identical, as indicated in (16a). This simply reflects the subject identity condition in CVC’s as discussed in Chapter. The theme-sharing condition in (16b) reflects the Object Identity Condition in CVC’s, which is relevant to serial verbal constructions (SVC’s). Since the donatory construction (12i) is an SVC, it is natural for it to be subjected to this condition. On the other hand, no verbal-type auxiliary construction (VCC), including the benefactive construction, has a theme in V2, and therefore theme-sharing is out of the question.

Although the donatory verb cwnu has the argument structure <ag, go, th>, its grammaticalized benefactive counterpart has a lighter argument structure <ag, (go)> as indicated earlier. The goal role of the benefactive verb is vulnerable as will be observed in great detail shortly. (16c) illustrates a case where go cannot appear as a theta role of the benefactive verb, i.e., when the embedded verb (V1) is intransitive. Finally, (16d) notes that the semantic content of the goal role is “receiver” with the donatory verb cwnu and “beneficiary” with the benefactive verb cwnu.

4.2. Functional Filters

For a proper explanation of various benefactive constructions, we need to have a set of devices to filter to unacceptable sentences. I propose the following filtering devices.

4.2.1. Theme Reference-Transferability Condition

As has already mentioned, Shibatani’s unified ‘Give-schema’ approach fails to provide a clear explanation for the valency differences in argument structure between donatory and benefactive constructions. The first problem is related to example (3) which is repeated in the following:

(17) Mary-ka John-eykey chayk-lul sa-e cwnu-ess-ta
     -Nom -Go book-Acc buy give-past-Dec
     \( s_a v_1 + cwnu v_2 \rightarrow s_a -cwuta v_1 v_2 \)
(i) ‘Mary bought a book to John.’
AS: \( <ag_1 th_i> v_1 + <ag_2 go_2 th_i> v_2 \rightarrow <ag_12 go_2 th_i> v_1 v_2 \)
(ii) ‘Mary bought a book for John.’
AS: \( <ag_1 th_i> v_1 + <ag_2 go_2> v_2 \rightarrow <ag_12 go_2 th_i> v_1 v_2 \)

Comparison of the argument structures ((17i) with <th> and (17ii) without <th>) reveals that the argument structure is sensitive to the semantics of the sentence. The interpretation (17i) is for the donatory or dative constructions while (17ii) is for the benefactive one. In this distinction, the properties of the theme object argument is crucial. Only a physical, tangible, and transferable object can be employed as a theme object for a
dative interpretation. This becomes evident if we compare the argument structure in (17i) with the following:

(18) Mary-ka John-eykey kaps-lul kkak-e cwu-ess-ta
    -Nom    -Go price-Acc cut-CM give-past-Dec
        kkakav1 + cwuv2  →  kakka-e-cwuta v1,v2
(i) *Mary cut the price to John.’
    AS: <ag1 th1>v1 + <ag2 go2 th2>v2  →  <ag12 go2 th12>v1,v2
(ii) ‘Mary cut the price for John.’
    AS: <ag1 th1>v1 + <ag2 go2 th2>v2  →  <ag12 go2 th1>v1,v2

The theme argument kaps ‘price’ is a non-transferable object, thus the first dative interpretation (18i) is unacceptable. The following are additional examples with benefactive-only interpretation. For these examples, dative interpretation is not possible.

(19) Mary-ka John-eykey mahlha-e cwu-ess-ta
    -Nom    -Go tell-CM give-past-Dec
        mahlhav1 + cwuv2  →  mahlha-e-cwuta v1,v2
    AS: <ag1 go1>v1 + <ag3 go3>v2  →  <ag12 go2 th1>v1,v2
    ‘Mary talked to John about it (for John).’

(20) Mary-ka John-eykey kulim-ul chingchanha-e cwu-ess-ta
    -Nom    -Go picture-Acc tell-CM give-past-Dec
        chingchanhav1 + cwuv2  →  chingchanha-e-cwuv1,v2
    AS: <ag1 th1>v1 + <ag2 go2 th2>v2  →  <ag12 go2 th1>v1,v2
    ‘Mary praised for her painting (for John).’

4.2.2. Temporal/Spatial Immediacy Condition

The second condition is closely related to discourse. One of the most important discourse factors that affects the judgment of the grammaticality of relevant sentences is the ‘Temporal/Spatial immediacy condition’. This pragmatic condition requires a goal NP reference (usually a benefactive) to be present at the event scene at the time when the sentence is uttered. Otherwise, the sentence is unacceptable due to the violation of the felicity code in the given situation. Consider the following examples:

(21) Mary-ka halapenum-kkey yo-lul kkal-e tuly-ess-ta
    -Nom father-Go mattress-Acc spread-CM give-past-Dec
        kkalav1 + tulyv2  →  kkalae-tulyta v1,v2
    AS: <ag1 th1>v1 + <ag2 go2>v2  →  <ag12 go2 th1>v1,v2
    ‘Mary spread a mattress for her grandfather.’
This sentence is perfect in ordinary situation but if the situation changes, i.e., if Mary’s grandmother is absent at the moment of speaking, the acceptability of the sentence dramatically degrades. In other words, if the beneficiary (halapeci ‘grandfather’) of a benefactive action kkal-e cwuta ‘to spread a mattress for someone’ is absent at the moment, the felicity code is violated, rendering the sentence unacceptable.

4.2.3. Appropriateness Condition

For some other examples, different kinds of conditions or constraints are needed for the goal (i.e., beneficiary) argument NP to the felicitously realized. The first one is an ‘Appropriateness condition’. A sentence should be appropriate to the context. Consider the following:

(22) a. Mary-ka sensayngnim-kkey kwutwu-lul takk-e tuly-ess-ta
    -Nom teacher-Go shoes-Acc polish give-past-Dec
    AS: <ag₁, th₁>V₁ + <ag₂ go₂>V₂  →  <ag₁₁ go₁₂ th₂>V₁>V₂
    ‘Mary polished the shoes for her teacher.’

    b. ?Mary-ka sensayngnim-kkey yuichang-lul takk-e tuly-ess-ta
       -Nom teacher-Go window-Acc clean-CM give-past-Dec
    ‘Mary cleaned windows for her teacher.’

(23) a. Mary-ka sensayngnim-kkey mwun-lul yel-e tuly-ess-ta
    -Nom teacher-Go door-Acc open give-past-Dec
    AS: <ag₁, th₁>V₁ + <ag₂ go₂>V₂  →  <ag₁₁ go₁₂ th₂>V₁>V₂
    ‘Mary opened the door for her teacher.’

    b. ?Mary-ka sensayngnim-kkey mwun-lul tat-e tuly-ess-ta
       -Nom teacher-Go door-Acc close-CM give-past-Dec
    ‘Mary closed the door for her teacher.’

Despite the fact that all embedded verbs (V₁’s) in the sentences inn (22) and (23) are uniformly transitive, the grammaticality of the (b) sentences is unacceptable. The (b) sentences do not fit into appropriate situations in normal context while (a) sentences do. In order to improve the acceptability of (b) sentences, additional contextual elaboration is needed. Consider the following example:

(24) (Sensangnim-kkeyse Pwuthakhasiesski ttaymwuyney)
    (Since her teacher asked Mary to do so)
    Mary-ka sensayngnim-kkey yuichang-ul takk-e tuly-ess-ta
       -Nom teacher-Go window-Acc clean give-past-Dec
    ‘Mary cleaned the window for her teacher.’
(25) (Sensangnim-kkeyse Pwuthakhasiesski ttaymwyuney)
   (Since her teacher asked Mary to do so)
   Mary-ka sensaygnim-kkey mwun-lul tat-e tuly-ess-ta
          -Nom    teacher-Go      door-Acc close    give-past-Dec
   ‘Mary closed the door for her teacher.’

4.3. Other filters

4.3.1. Intransitivity Filter

As indicated earlier, when an intransitive verb is employed as an embedded verbal (V1)
in a benefactive construction, it triggers another type of filter-the so-called ‘Intransitivity
filter’. Consider the following example:

(26) a. (= (15))
   Mary-ka (*John-eykey) kuckcang-ey ka-e cwu-ess-ta
           -Nom       theater-to go-CM give-past-Dec
   AS: <ag₁ go₁>V₁ + <ag₂ go₂>V₂ → <ag₁₂ go₁₂>V₁-V₂
   ‘Mary went to the theater for John
b. Mary-ka (*John-eykey) nol-e cwu-ess-ta
           -Nom     -Go play-CM give-past-Dec
   AS: <ag₁>V₁ + <ag₂>V₂ → <ag₁₂>V₁-V₂
   ‘Mary played with John for him.

   The ‘intransitivity filter’ suppresses the surface realization of a goal (beneficiary)
argument. This suppression is an obligatory process. If it does not apply, then the output
sentence becomes unacceptable as marked in (26). This process also affects the meaning
of the sentence. Since a goal argument never surfaces, the corresponding componential
meaning must not be realized either. The beneficiary argument just remains understood.
The only way to express the beneficiary argument on surface to put it in an adjunct
position as in (27) in the following:

(27) (John-ka Pwuthay-ss-ki ttaymwyuney)
   (Since John asked Mary to do so)
   John-ul wihay Mary-ka kuckcang-ey ka-e cwu-ess-ta
           -Acc    for       -Nom theater-to go give-past-Dec
   ‘For John, Mary went to the theater (because John requested to do so.’)

   The above observation leads us to conclude that the benefactive verb (V2) no
longer carries the theta role of go if V1 is intransitive. If we postulated a go role, there
would be no NP argument, either overt or covert, to which the role could be discharged.
This implies that the V2 becomes more easily grammaticalized with an intransitive V1
than with a transitive V1, with its argument structure losing the goal role and becoming
lighter. It is well known that a transitive construction is stronger than an intransitive construction in maintaining its independence as a clause.

4.3.2. Animate-Object Constraint

While an animate argument is selected as the theme of an embedded verbal (V1), it exerts an effect similar to the ‘intransitivity filter’ on the beneficiary argument. Thus, the goal NP is suppressed and does not surface. Consider the following examples:

(28) a. (emeni-kkeyse Pwuthakha-si-esski taymwuyney)
   (mother-Nom request-Hon-Past-because)
   Mary-ka John-lul towu-e cwu-ess-ta
   *tuly-ess-ta
   -Nom -Acc help-CM give-past-Dec
   AS: <ag₁ th₁> v₁ + <ag₂ go₂> v₂ → <ag₁₂ th₁> v₁-v₂
   ‘Mary helped John (because his mother requested it).’
      -Nom -Acc help-CM give-past-Dec
      ‘Mary helped John for John (because her mother requested it).’
      *tuli-ess-ta
      -Nom mother-Go -Acc help-CM give-past-Dec
      ‘Mary helped John for his mother (because his mother requested it).’

The forced realization of a goal argument renders the sentence unacceptable as shown in (28b) and (28c). Again, the only way to represent a goal argument on the surface is to adjoin it in an adverbial position within a sentence as in the following:

(29) a. (emeni-kkeyse Pwuthakha-si-esski taymwuyney)
   (mother-Nom request-Hon-Past-because)
   John-lul wihay Mary-ka John-lul towu-e cwu-ess-ta
   -Nom -Acc help-CM give-past-Dec
   ‘For John Mary helped him (John) (because his mother requested to do so).’
   b. emeni-lul wihay Mary-ka John-lul towu-e cwu-ess-ta
      mother-Acc for -Nom -Acc help-CM give-past-Dec
      ‘For his mother Mary helped him (John) (because his mother requested to do so).’

If the animate object is replaced by an inanimate object, the goal argument can appear, as in the following sentences.
(30) a. Mary-ka John-eykey ku il-ul towu-e cwu-ess-ta
   -Nom -Go the workf-Acc help-CM give-past-Dec
   AS: \(<ag_{1,2} th_{1}v_{1}, v_{2} \rightarrow <ag_{1,2} th_{1}v_{1}, v_{2}
   'Mary helped with the work for John'

b. Mary-ka emeni-eykey ku il-ul towu-e tuly-ess-ta
   -Nom -Go the workf-Acc help-CM give-past-Dec
   AS: \(<ag_{1,2} th_{1}v_{1}, v_{2} \rightarrow <ag_{1,2} th_{1}v_{1}, v_{2}
   'Mary helped with the work for his mother.'

Thus, when V1 has an animate theme argument, the benefactive verb (V2) seems to become more cohesive with V1, as if V1 + V2 were a single compound verb. This appears to be because an animate NP is the stronger nominal argument, so strong that it makes the benefactive verb function only as an auxiliary to its own verb (V1) without having a separate beneficiary argument. This intriguing syntactico-semantic issue needs further study.

5. Argument Licensing

Since donatory constructions are a subtype of SVC’s, they are subject to SVC licensing strategies. Thus, all five of the argument licensing conditions are satisfied. It has the following lexico-syntactic properties.

(31) V2: cwuata 'give something to someone.'
   [+CM]
   \(<ag go th> \)
   V1: Verb
   \(<X1 = <X2 \)
   CM = -c

Observe the following tree as an illustration and notice how the argument licensing conditions are satisfied.
The Subject Identity Condition is satisfied by the pair of coindexed subject argument Mary and PROi. Similarly, the Object Identity Condition is satisfied by the pair of coindexed object arguments sakwa and PRO. The Exhaustive Discharge Condition is met since the AS of both V1 and V2 are exhaustively discharged to either overt or covert arguments one to one. The Head Final Parameter is also met since the final verb (V2) cwu takes precedence in the licensing of arguments over V1 sa. Finally, the Stray Argument Linking Rule is also vacuously satisfied since no stray argument is left after the licensing scheme of V1 is applied.

Contrastingly, BVC’s are a subtype of auxiliary verbal constructions, especially verbal complement constructions (VCC’s). Thus, details aside, the benefactive verb has the following lexico-syntactic properties.

(33) V2: cwu(a ‘give the benefit of doing to (someone)/ to do/ be for (someone)’

[+CM]
<ag go th>
V1: Verb
<X1 = <X2
CM = -e

Again, observe the following tree underlying a subtype of benefactive constructions and notice how the argument licensing conditions are satisfied.
Benefactive constructions are different from donnatory constructions in two respects. First, they must take a complement clause ([+CS]) and second, they do not have a theme role. Thus, the Object Identity Conditions is vacuous. Notice in the above tree that the embedded theme argument is realized according to the Stray Argument Linking Rule because V2 does not contain its own theme.

Many subtypes of benefactive construction discussed in the previous sections will be licensed in a similar manner.

6. Summary

The basic usages, structure, and function of the -e cwuta benefactive construction in Korean was discussed. I have also discussed problems in current analysis with regard to the same construction. The following problem were discussed:

(35) a. Structure- and category-oriented approaches do not correctly predict the acceptability profile of the sentences in (7-9), (15), (18), (22-23), and (26).
   b. Shibatani’s Construal by the Give-schema theory’s does not correctly predict the semantics and pragmatics of benefactive construction.
   c. Shibatani’s Construal by the Give-schema theory’s does not address various structural and contextual filters.
   d. Shibatani’s coindexing interpretation module does not fully account for complement sentential themes.

Acknowledging these problems, I suggested various filters including the theme referent-transferability condition, the temporal/spatial immediacy condition, the intransitivity
constraint, the appropriateness condition, and the animate-object constraint. Also, an interesting aspect in the change of argument structure in relevant construction with various configurations has been observed.

I have also discussed argument licensing with regard to donatory and benefactive constructions.

As for the grammaticalization from a conjunctive donatory construction to an embedded donatory (serial verbal) construction to a full-fledged benefactive construction, the following table provides a summary.

(36)

<table>
<thead>
<tr>
<th>stage</th>
<th>meaning</th>
<th>Condition</th>
<th>As</th>
<th>Exs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>to give something to someone (for him/her/them)</td>
<td>(1) theme referent-transferability condition</td>
<td>&lt;ag, go, tl&gt;</td>
<td>(2); (3i); (12i)</td>
</tr>
<tr>
<td>II</td>
<td>to give the benefit of doing to someone</td>
<td>(2) lack of (1) (3) temporality/spatial immediacy condition (i.e., beneficiary's presence at event scene)</td>
<td>&lt;ag, go&gt; [+CS]</td>
<td>(3ii, 3iii); (5a-5c); (7a), (9*a), (9a)</td>
</tr>
<tr>
<td>III</td>
<td>to do/be for (an understood but unspecified person)</td>
<td></td>
<td>&lt;ag, go&gt; [+CS]</td>
<td>(15); (25)</td>
</tr>
</tbody>
</table>

(36) summarizes several significant points. First, it shows the difference in meaning between stages (in the Meaning column). Second, it clearly shows the conditions to be met, whether they are syntactic, semantic, pragmatic, or discourse one (in the Condition column). Third, it clearly show the change of argument structure of the benefactive verb (in the As column). Finally, it systematically captures the nature of grammaticalization. In other words, grammaticalization results from the superimposition of certain specific conditions. One crucial point in this approach is that the more a construction (in this particular case 'benefactive construction' V+-e cwuda) becomes grammaticalized, the more its argument valency is reduced. A final incidental observation is that adverbial benefactive phrases such as -(i)ul wiha-ye(-se) have begun to take over the function of the defunct goal argument in stage III. As a final word, this analysis is applicable to many other constructions with the V1-CM + V2 configuration.
References


Parameterization of Nominative Case Checking in Minimalist Syntax

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1. Introduction
Adopting the basic tenet of Pollock (1989) and developing an idea from his earlier work (1991), Chomsky (1993:7) proposes that "Case properties depend on characteristics of T and the V head of VP." Under this proposal, it is suggested that nominative case is checked off, via Spec-head agreement, by T with the feature [+Tense], which head-joins to AGR-S. This line of approach underwent radical revision in recent minimalist syntax outlined in Chomsky 1995b, where case is reinterpreted as one of the formal features of DPs. However, the basic principle remains unchanged that it is the feature [+Tense] that enables T to check off the nominative case feature. As an alternative, Chomsky (1995b:255) considers AGR-S as the nominative case checker, but disregards this idea for simplicity. He later goes on to argue for the elimination of agreement projections and holds that AGR exists as a locus of φ-features, not as an independent category, an assumption which I adopt throughout this paper.

The minimalist theory works well for English-type languages that allow nominative subjects only in tensed (and agreeing) clauses. Consideration of a range of cross-linguistic data in the same spirit, however, indicates that the theory has room for improvement in accounting for case phenomena in marked clauses: the subject in untensed but agreeing clauses has nominative case in European and Brazilian Portuguese, Berber, and Korean; the subject in tensed but unagreeing clauses is obligatorily ECMed and bears accusative case in Turkish. What is suggested here is that the occurrence of nominative case and its checking are sensitive to the presence of the feature [AGR-S] or φ-features of T in languages of the Portuguese type. This is not predicted and is left unexplained under the minimalist theory. On the other hand, a look at such languages as Modern Greek and West-Flemish from the same angle, where nominative subjects can occur in tensed but unagreeing clauses, reveals that nominative case is a sole property of the feature [+Tense] of T in these languages. This fact then excludes the option of universally choosing φ-features over the [+Tense] feature as a nominative case feature checker.
Given that neither the [+Tense] feature nor $\phi$-features alone are uniformly responsible for nominative case checking, this paper proposes that nominative case checking is parameterized in such a way that the [+Tense] feature of T checks off the nominative case feature in English-type languages while $\phi$-features of T remove such a feature in Portuguese-type languages. It also claims that the case feature of case checkers is not necessarily intrinsic cross-linguistically, as opposed to what Chomsky (1995b:235-238) states.

The paper begins with a recapitulation of minimalist case theory and the status of AGR within the framework of minimalist syntax. Section 3 demonstrates that $\phi$-features are correlated with nominative case in Portuguese-type languages. Section 4, on the other hand, shows that there is a close bond between nominative case and the [+Tense] feature in languages like Modern Greek and West-Flemish. Section 5 puts forward a parameterized theory of nominative case checking. The last section summarizes what has been discussed.

2. The Elimination of AGR and Minimalist Case Theory
It is claimed in recent minimalist syntax (Chomsky 1995b:236-238, 255, 377) that AGR lacks $\phi$-features and does not exist in the lexicon, presumably, in any language. Under this claim, $\phi$-features of predicates, verbs and adjectives, are believed to be optionally added to the predicates when they are drawn from the lexicon to the numeration, as are $\phi$-features of DPs. Subject agreement receives an analogous account: T is optionally assigned $\phi$-features in the transition from lexicon to numeration. With the reinterpretation of AGR as a collection of $\phi$-features along the above lines, Chomsky (1995b:255) revises his earlier version of minimalist case theory, where case and agreement of DPs are checked when T and transitive V raise to AGR-S and AGR-O respectively. He then completely exhausts the possibility that AGR has or shares a case-checking ability with T or V. The property of case checking is then solely attributed to T with the feature [+Tense] for nominative case and transitive V for accusative case. To the extent that AGR has neither $\phi$-features nor case-checking properties, AGR is said to play no role in feature checking. Furthermore, Chomsky (1995b:240) argues that AGR lacks semantic properties and is not interpretable at either LF or PF. By contrast, other functional categories, T, C, and D, each of which respectively
represents time, mood, and referentiality, are held to be interpretable at both
or either interface levels.

With the lack of an independent motivation for postulating AGR as a
separate category, current minimalist syntax does away with AGR, but retains
the same explanatory power by resorting to a light verb and multiple-Spec
configuration. The former was introduced to account for overt object raising
that was once taken as evidence for the existence of AGR-O, the latter to
accommodate Multiple-Subject Constructions (MSC) like the Transitive
Expletive Constructions (TEC) reported in Jonas and Bobaljik (1993).
According to Chomsky (1995b:352), the light verb $v$ that occurs in what was
taken to be AGR-O position not only induces overt object raising when its
nominal feature is strong but also triggers covert object raising when the
feature in question is weak. The landing site for the moving object is the
outer [Spec, $v$] one level higher than the inner [Spec, $v$] occupied by the
based-generated subject. As far as MSCs are concerned, Chomsky (1995b:354)
relies on a parameterized theory of properties of T that says the $\phi$- and case
features of T can enter into a checking relation more than once in some
languages. Languages that select this option are predicted to allow multiple
subjects and any combination of subjects and expletives in [Spec, T], multiple
Specs being available under the phrase structure theory outlined in Chomsky
(1995a). Chomsky takes this line of analysis as further evidence for
eliminating AGR.

Prior to detailing minimalist case theory, a word on formal features and
their classification seems to be in order. In minimalist syntax, formal features
of lexical items are divided into two types: those which receive an
interpretation at LF, [+interpretable], versus those which enter into no
interpretation at LF, [-interpretable]. The former include categorial features of
lexical items and $\phi$-features of DP, and the latter cover case features of DP, T,
and transitive V, in addition to $\phi$-features of T, V, and A. With this
dichotomy of all the formal features in terms of interpretability, Chomsky
(1995b:279-230) goes on to argue that [-interpretable] features are always
deleted, meaning accessible to the computation but invisible at LF when
checked, while features with the opposite value are erased, understood to be
no longer accessible to syntactic processes once checked.

Also of relevance and importance is to note Chomsky's (1995b:262) claim
that it is a formal feature, not a category of a lexical item that is raised by the
operation Move, hence Move Feature, Move F in short. Such a claim does
not appear to hold for overt raising in which case the whole category moves.
Chomsky attributes this to obligatory pied-piping of phonetic material
required for PF convergence. By contrast, covert raising that is not subject to
the PF requirement is strictly limited to pure feature raising. It must also be
understood that when a feature F of a lexical item raises to head-adjoin to its
target for checking, it carries along the rest of the formal features of the lexical
item, which can enter into a checking relation with features or sublabels of
the same target with no cost. With this much background in mind, let us
now turn to case theory in Move-F syntax.

holds that the nominative case feature is obligatorily and uniformly checked
off by the [+Tense] feature of T as a free rider when the D-feature of DP, along
with other features and phonetic material, is raised to [Spec, TP] for the
satisfaction of T’s EPP feature. His examples below show how the system
works:

(1)   a.   seem [(that) John is intelligent]
b.   T seems (that) [\_TP John \_T is [\_AP t1 [\_A, t2 intelligent]
c.   It seems that John is intelligent.
d.   *John seems [(that) t is intelligent].

Along the lines suggested by Chomsky (1995a and 1995b), it is assumed that
derivation (1a) is formed by two operations: Merge and Move. (1b) shows the
derivational process of (1a). There are two options in completing derivation
(1a): one is to merge the derivation with the expletive it, (1c), and the other is
move John to [Spec, TP] of a higher clause, (1d). As can be seen from the
well-formedness of (1c), only the first option gives rise to a convergent
derivation. The reason for this is crystal-clear. When John raises to [Spec,
TP] of the embedded clause to satisfy the EPP or the D-feature of the embedded
T, which is [-interpretable] and thus requires obligatory checking, its ϕ– and
nominative case features, along with its D-feature, are checked by the same T
as a free-rider. When John further moves to [Spec, TP] of the matrix clause, it
checks off the D- and ϕ–features of the matrix T, but not T’s case-assigning
feature. This is because unlike its other [+interpretable] features, the [-
interpretable] case feature of John has been erased as result of its checking
with the lower T and cannot enter into a further checking relation with the higher T. That is, the nominative case-assigning feature of the matrix T, which must be checked for the derivation to converge, being [-interpretable], is left unchecked and consequently constitutes an illegitimate object at LF. This explains why derivation (1d) crashes. On the other hand, when we merge structure (1a) with the expletive it, all the features of the matrix T are checked off. Thus, no illegitimate object exists at LF and convergent derivation (1c) emerges.

Exactly the opposite situation arises when the subordinate clause is non-finite (or untensed and unagreeing), as shown in (2):

(2) a. seems [John to be intelligent]
   b. John seems [ t to be intelligent].
   c. *It seems [John to be intelligent].

At the point where the derivation reaches (2a) in the way depicted in (1b), raising John to the higher [Spec, TP] leads to the convergent derivation (2b). It follows that John cannot have its nominative case feature checked off in the lower [Spec, TP] since the lower T is non-finite, lacking the feature [+Tense], and hence lacks the nominative case-assigning feature. Given that the matrix [Spec, TP] is the only place where its case feature can be checked off, John has no choice but to move up to that position. In the same configuration, checking of the rest of the features is done at the same time. The ungrammaticality of (2c) is straightforward: John's case feature remains unchecked. Moreover, it is out of the question to check the case feature at LF. The matrix T's case feature is no longer available since it has already entered into a checking relation with the expletive it and as a result, was erased owing to its [-interpretable] nature.

The basic mechanism and underlying assumptions above also apply to accusative case checking. When the nominal feature of the light verb v is weak as in English, only the D-feature of the object DP, together with its other features, head-joins to the v and satisfies its nominal feature. The checking of pied-piped φ- and case features of the DP by the transitive V also takes place free of charge. On the contrary, the whole object DP overtly moves to substitute the outer [Spec, v] only in the case that v has a strong nominal feature. This operation is then followed by overt raising of V to v, forming
[ν V+ν]. In this configuration, the case feature of the raised DP is checked by the complex and so are its φ-features.

In sum, recent minimalist syntax dispenses with the category AGR on the grounds that AGR lacks feature-checking roles and interpretable semantic properties at the interface levels. It instead holds that φ-features are now added to substantive lexical items and T on the way to the numeration. It is also claimed that nominative and accusative case features are respectively checked by T with the feature [+Tense] and transitive V as a free rider when pied-piped by the D-feature of DP that raises to satisfy the D-features of T and ν.

3. The Correlation between Nominative Case and φ-features
This section argues that the minimalist claim that nominative case depends on the feature [+Tense] of T across all languages is too strong. To this end, I investigate languages in which φ- and [Tense] features can be dissociated and show that the occurrence of nominative case in subject position is systematically contingent on the presence of φ-features in a group of languages. I present two types of empirical evidence to the above effect: subjects in untensed but agreeing clauses have nominative case in Brazilian and European Portuguese, Berber, and Korean; subjects in embedded tensed but unagreeing clauses bear accusative case due to ECM and can undergo passivization, assuming nominative case in Turkish. Keeping these facts in mind, now let us take a close look at the languages at issue one by one.

3.1 Brazilian Portuguese
The standard dialect of Brazilian Portuguese has so-called inflected or personal infinitives, that is, untensed clauses with a lexical subject or pro that show overt agreement with the subject in person and number. Of particular interest for the present purpose is that the lexical subject in the inflected infinitive is in nominative case. This constitutes a counterexample to the [+Tense]-centered minimalist nominative case theory. For the sake of concreteness, let us consider the sentences in (3) below from Lightfoot (1991:99):

(3) a. Ele pediu (para o João) para eu fazer-φ isso.
    he asked of (João) for I to-do-AGR this
b. Ele pediu (para o João) para eles fazer-em isso.
   he asked (of João) for they to-do-AGR this

In (3), the matrix verb *pediu* 'ask' takes as its complement an infinitive with a lexical subject preceded by *para* 'for'. As expected, the infinitive is not inflected for tense but marked for agreement with the subject although an overt agreement marker is lacking in (3a). It therefore has T with φ- and [-Tense] features. The lexical subject in the embedded clause bears not accusative but nominative case in (3a) with no doubt. According to Lightfoot (1991:100), the same holds for (3b), despite the fact that *eles* 'they or them' lacks distinctive nominative and accusative morphology. This line of analysis automatically entails that the preposition *para* 'for' has nothing to do with the nominative case of *eu* 'I' and *eles* 'they' in (3). Given that this is true and that T lacks a [+Tense] feature, the only candidate which can be responsible for nominative case in question is the φ–features of the embedded T.¹ That nominative case depends on φ–features in (3) and the embedded subject in (3b) is nominative is lent independent support by the fact that the inflected infinitive subject does not undergo raising. The grammaticality contrast in (4a) and (4b) below illustrates this point:

(4)  
   a. Parece [eles estar-em felizes].  
       seem they to-be-AGR happy  
   b. *Eles parecem [e] estar-em felizes].  
       they seem to-be-AGR happy

With the basic mechanisms of minimalist syntax in mind, a look at the well-formedness of (4a) under the theory to be developed here indicates that *eles

¹ Arguing on semantic grounds that not only finite clauses but also to-infinitives in English have a tense operator, Stowell (1981 and 1982) claims that to-infinitives are tensed clauses. Along this line, one may hold that inflected infinitives in Brazilian Portuguese have tense that checks off nominative case. Note, however, that this claim cannot be tenable in that in Stowell's system, it is not T but the [+Past] feature of T that is responsible for nominative case.
'they' has its case feature checked off within the embedded clause when forced to raise overtly by the EPP feature of the embedded T. As for the case-checking property of the \( \phi \)-features of the matrix T, it appears that a null expletive pronoun corresponding to the English expletive it establishes the checking relation with the matrix T and has its nominative case feature checked off. The ungrammaticality of (4b) then follows because the [-interpretable] case feature of the matrix T cannot be checked by eles 'they' since its case feature has been already checked and erased by the lower \( \phi \)-features of the embedded T, being [-interpretable].

At this point, the inflected infinitives in (4) seem to pattern like English finite clauses in the raising construction that we touched upon in (1) above. Compare (4a) with (1c) on the one hand and (4b) with (1d) on the other, each of which is repeated here as (5a) and (5b):

\[(5) \]

a. It seems that [John is intelligent].

b.约翰 seems [(that) \( t \) is intelligent].

The parallelism between (4) and (5) may be taken as an indication that \( \phi \)-features in the standard dialect of Brazilian Portuguese have the same function as the [+Tense] feature in English as far as nominative case checking is concerned. Without this proposal, the fact that (4) and (5) pattern alike could not be explained in a principled way as matters now stand. As a matter of fact, the standard minimalist syntax wrongly predicts that (4a) should be ungrammatical and (4b) grammatical. The reason is as follows: the [-interpretable] nominative case feature of eles 'they' remains unchecked in (4a) since T has no [+Tense] feature in the infinitive clause; on the contrary, this problem disappears in (4b), where the matrix T has such a feature that removes the case feature of eles 'they'.

Additional strong evidence in support of the correlation between nominative case and \( \phi \)-features in Brazilian Portuguese comes from what Lightfoot (1991:99) calls a non-standard innovative dialect. In the innovating dialect, the infinitival agreement marker is said to drop, so that uninflected infinitives occur in the position where we find their inflected counterparts in the standard dialect. As Lightfoot (1991:100) claims, the absence of an overt agreement marker shows that no agreement exists in the dialect. In the present study, this amounts to saying that there is no nominative case
checker within the infinitive and thus raising of the lexical infinitive subject is obligatory unless some local case checker is made available. The following example bears out this prediction:

(6)  
   a. Ele/ta parecem [el/estar felizes].
      they seem to-be happy
   b. * Parece [eles/estar felizes].
      seem they to-be happy
   c. Ele pediu (para o João) para eles fazer isso.
      he asked (of João) for them to-do this

The infinitival complement in (6) is inflected neither for tense nor for agreement. (6a) and (6b) sharply contrast with (4a) and (4b) respectively, while (6c) contrasts with (3b). As predicted, the infinitive subject eles ‘they’ in (6a) checks off its case feature against the $\phi$–features of the matrix T. This is not true of (6b), where eles ‘they’ is frozen in the embedded clause and keeps its case feature unchecked, resulting in the grammaticality contrast between the two.

The standard minimalist case theory also accounts for uninflected infinitives in (6) as neatly as the current $\phi$–feature-based analysis since they are just like English to-infinitives. To this extent, one may argue that the present approach is not so appealing as it first appears. Consideration of (6) in conjunction with (3) and (4), however, makes such an argument untenable. Additionally, more plausibility is added to the current approach when we investigate more data. Look at the sentences in (7):

(7)  
   a. [Eu/tu fazer-$\phi$/-es isso] vai ser difícil.
      I/you to-do-$\phi$/-$\text{AGR}$ this will be difficult
   b. Vai ser difícil [eu/tu fazer-$\phi$/-es isso].
      will be difficult I/you to-do-$\text{AGR}$/-$\text{AGR}$ this

Lightfoot (1991:101) says that sentences like (7a) and (7b) occur only in the standard dialect. The reason is self-evident: the lexical subject can have its case feature deleted against the $\phi$–features of the embedded T whether the inflected infinitive clause occurs in the subject position, (7a), or it is extrapolosed, (7b). This account explains why constructions like (8a) and (8b) are absent in the innovating dialect.
(8) a. *[Eu/tu fazer isso] vai ser difícil.
   I/you to-do this will be difficult
   b. *Vai ser difícil [eu/tu fazer isso].
   will be difficult I/you to-do this

Both (8a) and (8b) are ruled out because no case checker, namely, φ-features of T, for the nominative subject exists in the uninflected infinitive. That this analysis is right is confirmed by example (9) below from the innovating dialect:

(9) a. [Para mim/ti fazer isso] vai ser difícil.
   for me/you to-do this will be difficult
   b. Vai ser difícil [para mim/ti fazer isso].
   will be difficult for me/you to-do this

What we learn from (9a) and (9b) is that sentences like (8a) and (8b) can be rescued by the insertion of the prepositional complementizer para ‘for’ which takes of care of the case feature of the lexical infinitive subject.

   Given that φ-features check the case feature of the lexical subject in (7a) and (7b), the theory pursued here predicts that forms like (9a) and (9b) are not found in the standard dialect. Contrary to this prediction, inflected counterparts of (9a) and (9b) occur in the standard dialect, but receive different analyses. In other words, the inflected infinitives in (7a) and (7b) can be preceded by para ‘for’, as can be seen from the well-formedness of (10a) and (10b) below:

   for me/you to-do-AGR/-AGR this will be difficult
   b. Vai ser difícil [para mim/ti fazer-ϕ/-es isso].
   will be difficult for me/you to-do-AGR/-AGR this
   c.² [PP Para mim/ti] [ec fazer-ϕ/-es isso] vai ser difícil.
   d. Vai ser difícil [PP para mim/ti] [ec fazer-ϕ/-es isso].

² For reasons that immediately follow on the next page, I represent the empty element as [ec] here, a cover term for any empty category identified in generative syntax, despite the fact that Lightfoot believes it to be PRO.
Lightfoot (1991:101) analyzes (10a) and (10b) in such a way that in both instances, *para* is not a complementizer, but a preposition and *para mim/ti* is a matrix prepositional phrase (PP), as represented by (10c) and (10d) respectively. He maintains that the subject of the inflected infinitive above is an empty pronoun anaphoric to *mim/ti*. This line of analysis is then said to gain support from two different interpretations of an adverb occurring in the same position in (9) and (10). The argument goes as follows: when an adverb like *ainda hoje* 'still today' occurs between *mim/ti* and the verb *fazer* in the infinitive, it is understood to modify the embedded clause only in (9). This counts as evidence that *mim/ti* is the subject of *fazer* in (9). On the other hand, the interpretation of the adverb in question is associated with the main clause in (10). This is a sure sign that *para mim/ti* forms a prepositional phrase and belongs to the matrix clause.

I will largely carry over Lightfoot's analysis and his argument to the present inquiry. This makes it possible to accommodate the occurrence of constructions like (10a) and (10b) in the standard dialect in accordance with the φ-feature-based case theory. Mention must be made of the category of the embedded empty subject in (10c) and (10d), however. With no justification, Lightfoot (1991:101) identifies the empty subject as PRO which may be controlled by *mim/ti* in the matrix PP. This PRO analysis is at odds with the current approach in that the infinitive subject position is the case checking domain of the embedded T: PRO, which is said in minimalist syntax to bear null case, cannot help T erase its nominative case-checking property, but (10c) and (10d) are grammatical. Alternatively, it is not impossible to consider *pro* as the null subject since *pro* can bear the nominative case feature and have such a feature checked against T's φ-features. This may be an option, given that Portuguese in general is a pro-drop language. For this option to hold, however, there is price we have to pay: as opposed to the generally-held view, we have to assume that the referent of *pro* may be dependent because the empty subject in (10) refers to *mim/ti*. Based on Sigurdsson's (1991) claim that PRO is case-marked in Icelandic and case-marking of PRO is a parametrically available option, one may also say that the covert subject in question is nominative case-marked PRO. If we consider Lightfoot's PRO analysis in this context, the problem of the above sort can be avoided. As matters now stand, however, neither a *pro* nor a case-marked PRO account
accords with the current minimalist spirit without relying on a non-standard auxiliary assumption. For this reason, a more thorough investigation is necessary to clarify the nature of the empty subject at issue. Since this goes beyond the scope of this paper and is not a major concern in this inquiry, I will leave unanswered the question of whether the null element is controlled pro or case-marked PRO. It must be stressed, however, that the infinitive subject position in (10) is nominative case-marked by the φ-features of the embedded T. This suffices for our present purpose.

In sum, there is a close bond between nominative case and φ-features in Brazilian Portuguese, contra [+Tense]-based minimalist theory. This observation is made appealing by the fact that nominative subjects occur in the inflected infinitive and never raise to the matrix clause and by the fact that the reverse holds in the uninflected counterparts.

3.2 European Portuguese
As in the standard dialect of Brazilian Portuguese, inflected infinitives occur in European Portuguese. The nature of such infinitives is reported to be almost the same in the two varieties, but their distribution is said to be somewhat different. Raposo (1987:86) says that inflected infinitives are similar to finite clauses in that they can take a lexical subject. At the same time, he holds that they resemble non-finite clauses in that they do not stand by themselves and never take the complementizer que ‘that’. His examples below illustrate the above-mentioned properties of inflected infinitives:

(11)  a. [Eles aprovar-em a proposta] será difícil.  
      they to-approve-AGR the proposal will be difficult  
   b. Eu lamento [os deputados ter-em trabalhado pouco].  
      I regret the deputies to-have-AGR worked little  
   c. *[Que eles aprovar-em a proposta] será difícil.  
      that they to-approve-AGR the proposal will be difficult  
   d. *Eles querer-em aprovar a proposta.  
      They to-want-AGR to approve the proposal

In (11a) and (11b), the inflected infinitive respectively functions as a subject complement and an object complement. (11c) and (11d), on the other hand, show that the personal infinitive is unable to take que ‘that’ as a complementizer and does not occur on its own.
Noticing that the subject in the inflected infinitive is nominative, Raposo (1987:92-94) argues that the AGR feature of I(P) invariably assigns nominative case to its subject when it is itself case-marked. This is to say that AGR has a potential nominative case-assigning ability, but such an ability is exercised only when activated by other case assigners. This case mechanism will be referred to as a Case Transmission Approach in what follows. Raposo (1987:95) further makes the auxiliary assumption that IP is a maximal projection of [N], viz. NP, and can occupy the subject position. Now let us turn our attention to how Raposo’s approach works. In (11a) and (11b) above, AGR in the infinitive is governed or case-marked by the matrix INFL and the transitive verb. As a result, AGR is made to activate its potential ability to assign nominative case. This enables eles ‘they’ and os deputados ‘the deputies’ to get nominative case. Consideration of the sentences in (12) in the same context leads Raposo to advance the idea that when the inflected infinitive in (11a) is extraposed, it forms a co-indexed chain with a null expletive pro that occupies the subject position.

(12)  

a. \( \text{proj} \) será difícil [eles aprovar-\text{em} a proposta]  
b. \( \text{proj} \) será difícil [pro aprovar-\text{em} a proposta]

In the configuration above, the null subject pro receives nominative case from the matrix INFL and transmits it to the extraposed clause. Thanks to this transmission, the embedded AGR can assign nominative case to eles ‘they’ in (12a) and the infinitive subject pro in (12b).

The discussion up to this point reveals that AGR, i.e., \( \phi \)-features of T in the present context, plays a key role in nominative case assignment in European Portuguese. This point itself appears to be good enough to argue against the [+Tense]-centered minimalist theory of nominative case. The dependence of nominative case on \( \phi \)-features in European Portuguese is shown by the ungrammatical sentences in (13):

(13)  

a. *Sera difícil [eles aprovar a proposta].  
b. Sera difícil [PRO aprovar a proposta].

In contrast to (13b), (13a) is ruled out. This follows from the fact that the infinitive clause in both instances is not inflected for agreement, as indicated by the absence of a personal agreement marker, and hence the infinitive
subject eles 'they' is assigned no case even if nominative case from the matrix
INFL is transmitted to the extrapsed embedded clause via a chain co-indexed
with the null expletive. The well-formedness of (13b) is self-explanatory in
that PRO in pre-minimalist syntax was thought to bear no case.

It is clear at this stage that the presence of φ-features is obligatory in case
transmission or assignment. This analysis gains further support from the
grammaticality contrast between (12a) and (13a) and the occurrence of pro in
the inflected infinitive, (12b) versus that of PRO in uninflected infinitive,
(13b). It must be reiterated, however, that under Raposo’s approach, AGR
alone cannot assign case: AGR must get help from an external case assigner
for it to assign nominative case. In this vein, Raposo (1987:94) rules out the
sentences in (14) below ((11d) is repeated as (14b)):

(14) a. *Eles aprovar-em a proposta.
b. *Eles quer-em a aprovar a proposta.

AGR exists in both (14a) and (14b), but both examples are filtered out. Raposo
(1987:94) attributes this to the fact that AGR lacks an external governor or a
case assigner to activate its nominative case-assigning ability, which causes
the subject eles ‘they’ to fail to pass the case filter. The lack of an external
governor may be the reason why (14a) and (14b) are out.

There is more empirical evidence that suggests that AGR must depend on
other case assigners to activate its case-assigning ability. Consider (15) and
(16), which are respectively from Raposo (1987:96) and Raposo and Uriagereka
(1990:532-533):

(15) a. *Eles estão ansiosos [pro votar-em a proposta].
    they are anxious pro to-vote-AGR the proposal
b. Eles estão ansiosos de/por [pro votar-em a proposta].

(16) a. Essas actividades parecem [tj ser úteis para o país].
    those activities seem to-be useful to the country
b. *Parece [essas actividades ser úteis para o país].
    seem those activities to-be useful to the country
c. *Parece [essas actividades ser-em úteis para o país].

(15a) is different from (15b) only in that it has a dummy preposition de/por in
front of the inflected infinitive complement. Given this, Raposo accounts for
the grammaticality contrast between the two by arguing that the subject of the inflected infinitive, pro, is assigned case in (15b), not in (15a). The reason is that AGR in (15a) is not case-marked and lacks a case-assigning ability, while AGR in (15b) activates its case property, thanks to the dummy preposition, and assigns case to pro. This shows that AGR cannot assign case by itself. Raposo and Uriagereka (1990) continue to argue for this idea based on the ungrammaticality of (16c). As expected, the subject of the uninflected infinitive in the raising construction must raise to the matrix clause for case reasons in (16a). Failure to raise results in an ungrammatical sentence such as (16b). In addition, replacement of the uninflected infinitive with its inflected counterpart does not rescue sentences like (16b), as (16c) shows. This follows from the assumption that AGR in the inflected infinitive in (16c) cannot assign case to its subject on its own right.

Given this state of affairs, I here adopt Raposo’s original analysis. This would mean in the present inquiry that ϕ-features of T check off the nominative case feature when case-marked by other case-assigning elements. This in turn makes the ϕ-feature-based approach more appealing.

Interestingly, however, I have observed that sentences like (17a) and (17b) are not completely unacceptable to some speakers. Under Raposo’s analysis, both of these examples are predicted to be ungrammatical. That is, the subjects of the inflected infinitives, pro in (17a) and vós ‘you’ and eles ‘they’ in (17b), fail to receive case because the embedded AGR is not case-marked.

(17)³
a. Parece pro estar-es contente.
   seem pro to be-AGR happy
   ‘It seem like you are happy.’

b. Parece vós/eles estar-des/-em contente.
   seem you/they to be-AGR/AGR happy

Raposo (p.c.) rules out both (17a) and (17b) and says that they are not core-cases even if accepted by some speakers to some limited degree. To this extent, I attribute the marginal well-formedness of (17a) and (17b) to a dialectal or idiolectal variation. This treatment then leaves unaffected the above conclusion that ϕ-features check nominative case but require an other case-assigning element to activate their case property.

³ Examples in (17) are due to Maria Galvão (p.c.).
To sum up, φ-features of T in European Portuguese assume the same function as those of Brazilian Portuguese in that they license nominative case without respect to the existence of the feature [+Tense]. This is evidenced by the nominative-cased subject in clauses like inflected infinitives that have T with φ- and [-Tense] features. It must be remembered, however, that as Raposo (1987) argues, φ-features in European Portuguese, unlike those of Brazilian Portuguese, have to have their case checking property activated by other case-assigning elements before they can check off the nominative case feature.

3.3 Turkish

It is reported in George and Kornfilt (1981:118) and Kornfilt (1985:120) that a subset of Turkish verbs corresponding to English ECM verbs can take a clause as their complement. The complement clause is of two types: one is inflected for tense, but not for agreement, and the other is inflected for both tense and agreement. The two constructions are demonstrated below:

    Ahmet-nom we-Acc whisky-Acc drink-Pst believe-Pres-AGR
    ‘Ahmet believes us to have drunk the whisky.’

    Ahmet-Nom we-nom whisky-Acc drink-Pst-AGR believe-Pres-AGR
    ‘Ahmet believes we drank the whisky.’

    we-nom you-nom movie-Dat go-Pst believe-Prog-Pst-AGR
    ‘We thought you had gone to the movies.’

d. (Biz-f) [sen-φ sinema-y a git-ti-n] san-iyor-du-k.
    we-Nom you-Nom movie-Dat go-Pst-AGR believe-Prog-Pst-AGR
    ‘We believed you to have gone to the movies.’

(18a) and (18c) differ from (18b) and (18d) in that the former take a tensed but unagreeing complement clause, while the latter a tensed and agreeing clause. When we look at the embedded subject in (18a) and (18c), we soon discover

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4 Note that the c- and d-sentences in (18) and (19) are from Kornfilt (1985). The rest of the Turkish data in this subsection come from George and Kornfilt (1981) unless indicated otherwise.
that the subject bears not nominative but accusative case. The same subject
carries the opposite case, i.e., nominative case in (18b) and (18d). Noticing
that the only difference between the pair (18a) and (18b) on one hand and the
pair (18c) and (18d) on the other hand is the presence versus the absence of
AGR, George and Kornfilt (1981) and Kornfilt (1985) hold that AGR is a
nominative case assigner in Turkish. I adopt this claim and incorporate it
into the present inquiry. To the extent that the feature [+Tense] is present in
the embedded clause of (18a) through (18d), it is expected under the
minimalist theory that the embedded subject in all instances should be
nominative and have its case feature checked off against T’s [+Tense] feature.
This prediction is at odds with the facts: the embedded subject in (18a) and
(18c) is ECMed by the matrix verb and bears accusative case. Given this, what
seems to be obvious is that the [+Tense]-based minimalist theory of
nominative case is too strong to be applicable to Turkish and languages of the
same type. It must be admitted that φ-features are responsible for nominative
case checking in at least the languages under discussion, as (18b) and (18d)
indicate. Further examples to this effect are provided by Turkish. Consider
(19a) through (19d):

(19) a. (Biz-φ) [t viski-yi iC-ti] san-il-iyor-uz.
   we-Nom whisky-Acc drink-Pst believe-PASS-Pres-AGR
   ‘We are believed to have drunk the whisky.’

b. *(Biz-φ) [t viski-yi iC-ti-k] san-il-iyor-uz.
   we-Nom whisky-Acc drink-Pst-AGR believe-PASS-Pres-AGR
   Intended reading: ‘We are believed to have drunk the whisky.’

   you-Nom movie-Dat go-Pst believe-PASS-Prog-Pst-AGR
   ‘You were believed to have gone to the movies.’

   you-Nom movie-Dat go-Pst-AGR believe-PASS-Prog-Pst-AGR
   Intended reading: ‘You were believed to have gone to the movies.’

(19a) and (19c) are grammatical as opposed to (19b) and (19d). This amounts to
saying that the subject of tensed clauses undergo passivization. Not only is
this problematic for pre-minimalist syntax, where A-movement is driven by
the case requirements of the moving element, but also casts some doubts on
the minimalist case theory that [+Tense] is universally responsible for
nominative case checking. Passivization of the embedded subject is blocked
when the embedded clause is inflected for agreement, as evidenced by the
ungrammaticality of (19b) and (19d). The embedded subject in (19b) and (19d)
is assigned nominative case by \( \phi \)-features, so that movement of the subject is
forced neither by case nor by unchecked features. If we take this analysis into
account and follow the above reasoning, we are forced to say that the
[+Tense] feature of T contributes nothing to case checking of the subject in
Turkish. It is its \( \phi \)-features that remove the nominative case feature.

In short, tensed but unagreeing clauses in Turkish behave just like to-
infinite clauses in that the embedded subject is obligatorily ECMed and can
be passivized in some environments. Turkish agreeing clauses, on the
contrary, are analogous to English tensed clauses since no ECM and
exceptional passives are allowed. For a better understanding, compare (18)
with (20) and (19) with (21):

(20)  a. People expect them to be very quiet all the time.
     b. People expect they are very quiet all the time.
     c. We believe him to attend school regularly.
     d. We believe he attends school regularly.

(21)  a. They are expected t to be very quiet all the time.
     b. *They are expected t are very quiet all the time.
     c. He is believed t to attend school regularly.
     d. *He is believed t attends school regularly.

A minimalist account for (20) and (21) is as follows. The embedded T in (20a)
and (20c) lacks the feature [+Tense], so that its subject relies on the matrix verb
to have its case feature removed. This is not true of (20b) and (20d) where the
embedded T has the feature [+Tense] that takes care of the case feature of the
lower subject. When the matrix verb loses its case checking ability as a result
of passivization, the subject in question is forced to move by the EPP feature
of the matrix T to the matrix subject position. Subsequently, it enters into a
checking relation with its host, the matrix T, and erases all [-interpretable]
features including its case feature. In the same configuration, the case
property of the matrix T is left unerased in (20b) and (20d) because the subject
has its case feature checked off against the lower T that has [+Tense] feature.
This is why (20b) and (20d) are ruled out. The only way to rescue such
ungrammatical derivations is to merge the expletive it with the matrix T.
The identical behavior of a- and b-sentences in (18) and (19) with their counterparts in (20) and (21) suggests that the feature [+Tense] of the embedded T in the former plays no role in case checking of the embedded subject. Given this, consideration of the parallelism between b- and d-sentences in (18) and (19) and those in (20) and (21) leads us to arrive at the same conclusion as above, that φ–features in the former act in the same capacity as [+Tense] feature in the latter. In the present context, this is to say that φ–features assume the role of checking nominative case in Turkish, irrespective of the [Tense] feature.

More example in support of the above conclusion can be found in the raising construction. Consider example (22) below:

(22) a. (Siz-f) [t bÅtÅn viski-yi bitir-di] gibi gîrÅn-Åyor-sunuz. you-Nom whole whisky-Acc finish-Pst like look-Pres-AGR 'You look like you finished all of the whisky.'

b. [Siz–φ bÅtÅn viski-yi bitir-di-niz] gibi gîrÅn-Åyor-f. you-Nom whole whisky-Acc finish-Pst-AGR like look-Pres-AGR 'It looks like you finished all the whisky.'

(22a) differs from (22b) in terms of the features of the embedded T: the embedded T in the former has the feature [+Tense], but not φ–features, while it carries both features in the latter. The embedded subject in (22a) moves out of the lower clause and becomes the matrix subject to have its case feature checked off by φ–features of the matrix T. Contrary to this, the same subject in (22b) stays in the embedded clause since its case feature can be erased by φ–features of the lower T. Unless we resort to φ–features for nominative case checking, the different behavior of the embedded subjects is unexplained, as is the case with the [+Tense]-based minimalist approach to nominative case.

To summarize the Turkish discussion, an array of case-related syntactic facts in Turkish shows the correlation between nominative case and φ–features, not the [+Tense] feature. Such a close connection is lent support by the observation that the subject in tensed but unagreeing clauses raises to the matrix clause and is subject to ECM and exceptional passivization.

3.4 Berber

Berber is another instance of a language in which the occurrence of nominative case is correlated with φ–features. According to Choe (1988:106),
Berber allows a tense-neutral verb or the Aorist tense form in coordination and in the so-called ad-construction. (23a) and (23b) from Choe illustrate each of the constructions:

(23)  

a. Y-\text{ttcu} \text{ Mohand aysum t-ettc} \text{ Tifa aghrum.}  
   \text{3ms-ate Mohand meat 3fs-eat (Aor) Tifa bread}  
   \text{‘Mohand ate meat and Tifa ate bread.’}  

b. Y-bgha \text{ Mohand ad y-ghers} \text{ Yidir i tixsi.}  
   \text{3ms-want Mohand Fut 3ms-cut throat Idir to sheep}  
   \text{‘Mohand wants Idir to kill the sheep.’}

The verbs t-\text{ettc} ‘eat’ in the second conjunct of (23a) and y-\text{ghers} ‘cut the throat’ in the embedded clause of (23b) are not inflected for tense and thus have neutral tense. As a result, the tense of these verbs depends on that of the first conjunct in (23a) and that of the matrix clause in (23b). They, however, overtly agree with their subjects, Tifa in (23a) and Yidir in (23b), in person and number, as the glossary indicates. Based on this inflectional fact, Choe treats the constructions under discussion as untensed but agreeing clauses and claims that AGR of I(P) is connected with nominative case in Berber.

To the extent that Choe’s analysis is right, we have additional evidence that φ-features license nominative case. I maintain that this is the case, casting more doubts on Chomsky’s [+Tense]-based nominative case theory.

3.5 Korean

It has been a generally-held view among Korean linguists that the subject honorific morpheme, -\text{si}, which occurs when a speaker shows deference to the addressee, is an overt realization of subject-verb agreement and that φ-features are in charge of assigning nominative case. To name a few, such linguists include Young-Jae Yim (1984), Hak-Sung Han (1987), Hyon-Sook Choe (1988), Jong-Rurl Yoon (1990), Dong-Suk Ryu (1994), and Tai-Soo Kim (1996). As far as nominative case assignment in Korean is concerned, I am in full agreement with these linguists and adopt their analysis in what follows. The claim that the assignment of nominative case is due to φ-features, not the feature [+Tense], is based on the observation that nominative subjects co-occur with the agreement marker, -\text{si}, which can be phonetically null when the subject is not honored.
For the sake of clear exposition, let us consider some commonly-cited constructions in support of the above claim:

(24)  
      Yeonhee-Top professor-Hon-Nom go-AGR-C help-Pst-Dec
      ‘Yeonhee helped the professor to go.’
   b. [Sensang-nim-i suup ha-si ki]-ka pigon ha-ess-ta.
      teacher-Hon-Nom class do-AGR-C-Nom tired do-Pst-Dec
      ‘The teacher was tired with teaching a class.’
      uncle-Nom (Hon) himself-Nom leave-AGR-to-C try do-Pst-Dec
      ‘He tried to leave.’
   d. Dangsin-i chu-eky chunhwu ha-si-o.
      you-nom I-Dat call ha-AGR-Imp
      ‘You call me!’

The embedded verbs in (24a) through (24c) and the main verb in (24d) agree with their subjects, as we can see from the appearance of the honorific agreement marker, -si. The verbs in question, however, are not inflected for tense, so that they cannot take the past tense morpheme, -ess, in the above sentences. This is shown below:

(25)  
   b. *[Sensang-nim-i suup ha-si-ess ki]-ka pigon ha-ess-ta.
   d. *Dangsin-i chu-eky chunhwu ha-si-ess-o.

The sentences in (25) differ from those in (24) only in that the embedded verb in (25a) through (25c) and the main verb in (25d) take past tense. This tense inflection results in the ungrammaticality of these sentences, which are otherwise well-formed. This amounts to saying that the embedded clauses in (25a) through (25c) and sentence (25d) are untensed but inflected for agreement.

Given that Φ-features occur independently of the [+Tense] feature in (24), of particular interest for the present purpose is that the subject in untensed but agreeing sentences under discussion is in the nominative case, as indicated by the nominative case marker, -ka or -i. This fact leads one to maintain that Φ-features and nominative case are closely related. As long as this claim is plausible, it seems clear that Chomsky’s [+Tense]-based approach to nominative case is facing another problem. On the other hand, the claim
that nominative case checking is not the sole property of [+Tense] feature across languages gains additional support and becomes more appealing.

In short, Korean realizes untensed but agreeing clauses and provides another piece of evidence against the minimalist nominative case theory in that the nominative subject co-extensive with \( \phi \)-features, as is true in Brazilian and European Portuguese, Turkish, and Berber.

A summary of this section is now in order. In an attempt to weaken the minimalist claim that nominative case checking is a universal and intrinsic property of the feature [+Tense], this section has been concerned with nominative subjects in marked clauses across languages, where \( \phi \)- and [Tense] features are dissociated. It has been shown that the occurrence of nominative case and its checking depends on \( \phi \)-features, not on the [+Tense] feature, in Portuguese-type languages. Arguments to this effect have been made based on the following cross-linguistic facts: inflected infinitives in Brazilian Portuguese take nominative case-marked subjects and these subjects do not move to the matrix clause even in raising constructions. The opposite situation arises when the infinitives are not inflected; basically, the same story holds for European Portuguese where infinitives can have nominative subjects when inflected; in Turkish, subjects in tensed but unagreeing clauses are obligatorily ECMed, bearing accusative case, and further raise to higher clauses when matrix clauses are passivized. This does not happen when the clauses at issue agree with their subjects; subjects occur in untensed but agreeing constructions in both Berber and Korean and they are nominative in form.

4. The Correlation between Nominative Case and the [+Tense] Feature

In contrast to the preceding section, this section attempts to show that nominative case is exclusively [+Tense]-dependent in its occurrence and checking in some languages, which is more in line with the recent minimalist spirit. To achieve this objective, I look into languages with an emphasis on case-marking of the subject in tensed but unagreeing clauses. The reasoning behind this is that when the occurrence of the nominative subject is sensitive to the [+Tense] feature of T, it is the feature [+Tense] that checks off the nominative case feature. The cases to be discussed are Modern Greek and West- Flemish, which will be discussed in 4.1 and 4.2 respectively.
4.1 Modern Greek

The facts concerning Modern Greek are wholly based on Iatriou's (1993) report, as are the data cited in what follows. According to Iatriou, subjects of the so-called na-clauses are either nominative or accusative, depending on the context in which the clauses occur. When such clauses are used as complements of a set of ECM-type verbs, their subjects are accusative in form because of ECM by the matrix verbs. These complement clauses, however, are unlike those of English ECM verbs in the sense that they are not pure infinitives but tenseless agreeing sentences. What is meant by this is that the embedded T has f-features but lacks the [+Tense] feature. The following example is to the point:

(26) a. Vlepo ton Kostas na tiganizi psaria.
    see Det. Kostas/Acc fry-AGR fish
    'I see Kostas fry fish.'

b. Vazo ton Kostas na tiganizi psaria.
    put Det. Kostas/Acc fry-AGR fish
    'I am making Kostas fry fish.'

c. Fandazome ton Kostas na tiganizi psaria.
    imagine Det. Kostas/Acc fry-AGR fish
    'I imagine Kostas frying fish.'

In all the sentences above, the main subject position is occupied by pro. The embedded subject, Kostas, bears accusative case due to ECM, as indicated by the determiner ton, but is in full agreement with the embedded verb, tiganizi 'fry' in person and number. If we substitute ta pedhisa 'the children' for Kostas, the embedded verbs appear in the form of tiganizun, the third person plural form. When the embedded verb is replaced by its past tense counterpart, tiganize 'fried', the sentences in (26) become ungrammatical. Furthermore, this ungrammaticality remains unchanged even when the matrix verb is in the past tense, as shown below:

(27) a. *Idha/ vlepo ton Kostas na tiganize psaria.


   c. *Fandastika/ fandazome ton Kostas na tiganize psaria.

Iatriou is not clear about the status of the particle na, but holds that it is probably a modality marker, not a complementizer.
The verbs *idha, evala, and fandastika* are past tense forms of *vlepo ‘see’, vazoon ‘make’, and fandazome ‘imagine’. Irrespective of the tense of the matrix INFL, the ungrammaticality of (27) is due to the fact that the embedded verb is inflected for tense although the embedded sentence is characterized as an untensed clause.

Considering that the dependent clause in (26) is an untensed but agreeing sentence and its subject is subject to ECM by the matrix verb, one may well say that $\phi$-features play no role in nominative case checking in Modern Greek. When Modern Greek is compared with Turkish in this respect, it is clear that the case checking property of $\phi$-features varies from language to language and so does the occurrence of nominative case-marked DPs. This makes it imperative to elaborate the exclusively [+Tense]-dependent minimalist theory of nominative case. Iatridou provides further evidence in favor of the sensitivity of nominative case to the feature [+Tense] in Modern Greek. Consider the following sentences:

(28)  
\[ \begin{align*} 
\text{a. Elpizo o Kostas na tiganizi psaria.} & \quad \text{hope Det. Kostas/Nom fry-AGR fish} \\
& \quad \text{‘I hope Kostas fries fish.’} \\
\text{b. Ine dhination o Kostas na tiganizi psaria?} & \quad \text{is possible Det. Kostas/Nom fry-AGR fish} \\
& \quad \text{‘Is it possible that Kostas fries fish?’} \\
\text{c. Provlepo o Kostas na tiganizi psaria.} & \quad \text{predict Det. Kostas/Nom fry-AGR fish} \\
& \quad \text{‘I predict that Kostas is frying fish.’} 
\end{align*} \]

As in (26), the *na*-clause is a complement of the matrix predicate in (28), but its subject is in the nominative case. If the above hypothesis is right that nominative case is not co-extant with $\phi$-features in Modern Greek, this fact implies that the embedded T in (28) has both $\phi$- and [+Tense] features. To see whether this prediction is borne out, we can replace the verb in question with its past equivalent, *tiganise*. This substitution gives rise to grammatical sentences like those in (27).

(29)  
\[ \begin{align*} 
\text{a. Elpizo o Kostas na tiganise psaria.} \\
\text{b. Ine dhination o Kostas na tiganise psaria?} \\
\text{c. Provlepo o Kostas na tiganise psaria.} 
\end{align*} \]
The only difference between the *na*-clauses in (26) and those in (28) is the presence of [+Tense] features in the latter, as the grammaticality contrast between (27) and (29) shows. Given this, it is reasonable to say that nominative case of the embedded subject in (28) and (29) is due to the [+Tense] feature of the embedded T. In this respect, Modern Greek sharply contrasts with Portuguese-type languages.

It is said that the embedded subject can alternate with an empty subject in (28) and (29). Iatridou identifies this null element as *pro* on the grounds that the null element has an independent referent and occurs in a case-marked position. Of relevance to this phenomenon is that Modern Greek allows the untensed but agreeing-*na* clause to occur in non-ECM environments. In this case, the subject of the untensed clauses is always non-overt and can be understood to refer to the matrix subject or the matrix object. Sentences below are examples of this kind:

(30) a. Irlhate *na parete ta pragmata sas?*
come-2.pl. take-2.pl. the things your-pl.
'Did you come to get your things?'

b. Imaste  *ipochreomeni/ etimi na figue.*
Are-1.pl. obliged-pl. /ready-pl. leave-1.pl.
'We are obliged/ready to leave.'

c. Iche tin kalosini *na fighi.*
had-3.sg. Det. kindness leave
'He had the kindness to leave.'

d. Iposchethika *ston Kostas na dhiavaso afto to vivlio.*
promised-1.sg. to Kostas read-1.sg. this Det. book
'I promised Kostas to read this book.'

e. Episa *ton Kostas na dhiavasi afto to vivlio.*
persuaded-1.sg. Det. Kostas read-3s.g. this Det. book
'I persuaded Kostas to read this book.'

The tenseless and agreeing clause complements the main sentence in all instances above. The subject of the complement clause is a phonetically non-overt element and its referent depends on the matrix subject in (30a) through (30d) and the matrix object in (30e). According to Iatridou, past tense substitution in the embedded INFL renders (30) ungrammatical and so does the replacement of the null element with an overt category. The reason is said to be that the complement clause at issue is untensed and thus its subject position is not case-marked by either the embedded T or the matrix predicate.
This, together with the obligatorily controlled-reading of the empty subject, makes it easy to decide what the null subject is. As matters now stand, we must assume that it is PRO that occupies the subject position of the complement clauses in (30). This contrasts with the occurrence of pro in the same position of the na-clause in (28) and (29). What is suggested by this pro versus PRO contrast is that the feature [+Tense] is responsible for nominative case in Modern Greek. Further plausibility is added to this claim by the fact that a lexical subject can occur only in the environment where pro is licensed and it always bears nominative case. One more example in favor of the correlation between the [+Tense] feature and nominative case can be found. Iatridou (1993:182) draws attention to the difference between (26c) and (31b) on one hand and (27c) and (31d) on the other:

(31) a. Fandazome ton Kostas na tiganizi psaria.
   imagine Det. Kostas/Acc fry-AGR fish
   ‘I imagine Kostas frying fish.’
   b. Fandazome o Kostas/Nom na tiganizi psaria.
      imagine Det. Kostas fry-AGR fish
      ‘I imagine Kostas fried fish.’
   c. *Fandazome ton Kostas na ekleye.
   d. Fandazome o Kostas na ekleye.

(31a) and (31b) look alike on the surface: both take the na-clause as their complement. They are subject to different analyses, however. The former is an ECM-construction, while the latter is not. This is witnessed by the difference in case-marking of the embedded subject Kostas: Kostas carries accusative case in (31a) and nominative case in (31b), as indicated by the form of the determiner, ton versus o. A look at nominative case-making of Kostas in the present context suggests that the embedded clause is tensed, given that [+Tense] feature and nominative case go together in Modern Greek. Iatridou makes it clear in (31c) and (31d) that this prediction is borne out. The third person singular past tense verb, ekleye, can occur in (31b), not in (31a), as the grammaticality contrast between (31c) and (31d) shows. As Iatridou argues, this is an indication that the embedded T in (31b) has φ- and [+Tense]

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6 For the sake of exposition, (26c) is repeated here as (31a). Iatridou does not give an English gloss for the word ekleye.
features, as opposed to that in (31a) that carries only $\phi$-features. It is also worthwhile to note the meaning difference between the two, as the English translation indicates.

Summing up, we have hitherto seen that the [+Tense] feature of T, not its $\phi$-features, has the property of checking or assigning nominative case in Modern Greek. The basis of the argument to this effect has been that nominative subjects do not occur in untensed but agreeing clauses, but appear only in tensed clauses.

4.2 West-Flemish
The so-called nominative-cum-infinitive (NCI) construction in West-Flemish is another instance of a tensed but unagreeing clause reported in the literature whose lexical subject is nominative, not accusative. On the grounds that the NCI construction is a tensed but unagreeing clause and its subject bears nominative case, Haegeman (1986:133) proposes that nominative case is assigned by INFL with a [+Tense] feature. If Haegeman's analysis is right, we have good reason to say that there is a correlation between nominative case and the [+Tense] feature in West-Flemish. To see this, let us consider the NCI clauses from Haegeman (1986:125):

\begin{align*}
(32) & \quad \text{a. Mee ik da te zeggen hee-se dat hus gekocht} \\
& \quad \text{with 'I that to say has-she that house bought} \\
& \quad \text{'Because of my saying that she has bought that house'} \\
& \quad \text{b. Voor gie da te krypengoa-je vele moeten veranderen} \\
& \quad \text{for 'you that to get that you'll have to change a lot'} \\
& \quad \text{'In order to get that you'll have to change a lot'} \\
& \quad \text{c. Deur ik da te zeggen hee-se dat hus gekocht} \\
& \quad \text{by 'I that to say has-she that house bought} \\
& \quad \text{'Because of my saying that she has bought that house'}
\end{align*}

The subject of the te-infinitive, \textit{ik 'T} in (32a) and (32c) and \textit{gie 'you} in (32b), has nominative case, which is preceded by a preposition like \textit{mee 'with}, \textit{voor 'for}, and \textit{deur 'by}. This is not a general property of infinitives in West-Flemish in that normal or control infinitives take as their subject either PRO or an accusative DP in the ECM construction, as English infinitives do. What is interesting is that PRO can alternate with the lexical subject in the te-infinitive in (32). Another property of the NCI construction is that only full pronoun forms, not clitics, must be used when subjects are pronominal,
which is not true in pure finite clauses. Compare (33a) with (33b) and (33c) with (33d):

(33)  
  a. *Mee-k da te zeggen  
      with-I that to say  
  b.  
      Mee dan-k da gezeid heen  
      with that-I that said have  
  c. *Mee-k ik da te zeggen  
      with-I I that to say  
  d.  
      Mee dan-k ik da gezeid heen  
      with that-I I that said have  

The contrast in grammaticality between (33a) and (33b) shows that subject clitics are not allowed in the te-infinitives. We can also learn from the ill-formedness of (31c) that pronoun doubling does not alter the facts concerning cliticization. Assuming that the subject clitic is a lexical realization of AGR in INFL, Haegeman (1986:127) maintains that INFL of the NCI construction with a lexical subject has no agreement. She, however, continues to argue that the INFL in question has tense although unspecified for [+/-Past].

Arguments in favor of the above view are based on her observation of the following facts: the occurrence of tet, a focus marker, and independent temporal and modality interpretations are possible in the te-infinitives. According to Haegeman (1986:128), it is a characteristic of pure finite or tensed and agreeing clauses in West-Flemish to allow tet in COMP to focus-mark the content of the clause, for example, surprise, emphasis, etc. This is not the case in normal infinitives whose subject is PRO or an ECMed DP. Observe the following data:

(34)  
  a. Morgen goa-tet Valère weg  
      tomorrow goes-tet Valère away  
  b. da-tet Valère morgen weggoat  
      that-det Valère tomorrow away goes  
  c. dan-k proberen voor-(*tet) PRO weg te goan  
      that-I try for PRO away to go  
  d. dan-k gisteren (*tet) Valère zagen -weggoan  
      that-I tomorrow Valère saw leave

In (34a) and (34b), both of which are pure finite clauses, tet occurs, while this is not true in (34c), a prototype of pure infinitives, and (34d), where the infinitive subject is ECMed. Given this, Haegeman thinks of the distribution
of tet as one of the criteria that separate finite or tensed clauses from non-finite or untensed ones. Of importance here is that the NCI construction allows tet when its subject is lexical. On the other hand, such a focus marker is prohibited in the PRO-taking NCI construction. This is shown below:

(35) a. Mee tet Valère weg te goan
   with tet Valère away to go
b. *Mee tet PRO weg te goan

In fact, the above pattern holds for all the examples in (32). The focus marker, tet, can occur in (32), but such an occurrence gives rise to ungrammaticality when (32a) through (32c) are control structures like (35b) that allow PRO in place of a lexical subject. Given the present state of affairs, it seems clear that the NCI constructions in (32) pattern like tensed and agreeing clauses like (33c), (33d), (34a), and (34b) in that they license the occurrence of tet. It follows that both types of clauses are tensed.

More parallelism between the two constructions can be found in relation to the temporal reading of their subordinate clauses. In pure finite clauses, the dependent clause can select any tense and can be modified by any time-adverbials. The same is said to be true in the NCI constructions with a lexical subject. Haegeman attributes this common property to the tensedness of both constructions. That this is right is shown by the fact that the control non-finite clause is entirely contingent on the matrix clause as far as its temporal reading is concerned. Observe the following examples with a focus on the parallelism between (36) and (37):

(36) a. Mee dan-k da gisteren gezeid heen goa-se zie morgen weg
   with that-I that yesterday said have goes-she she tomorrow away
b. Mee dan-k gisteren nie moesten werken hen-k gekust
   with that-I yesterday not had-to work have-I cleaned
   with that-I tomorrow have-to work have-I yesterday cleaned

(37) a. Mee ik da gisteren te zeggen hee-se dat hus gekocht
   with I that yesterday to say has-she that house bought
b. Mee ik da gisteren te zeggen goa-se dat hus kopen
   with I that yesterday to say goes-she that house buy
   with I next year away to go have-I that house sold
Both in (36) and in (37), the dependent clause is free to select any tense and time-adverbials. In (38), however, the non-finite control subordinate clause cannot be independent of the matrix clause as far as its temporal reading is concerned. This dependent reading is taken to signal the absence of tense in (38).

Based on the identical behavior of pure finite clauses and NCI constructions with respect to the focus marker and their temporal readings, Haegeman holds that INFL of the latter has tense just like that of the former. Given that subject clitics, which are claimed to be a lexical realization of AGR, do not appear in the NCI constructions, she further argues that the INFL in question lacks agreement. Having said that the NCI construction has INFL of $[+$Tense, -AGR] in a pre-minimalist sense, Haegeman (1986:133) goes on to claim that the nominative subject in the construction is assigned its case by the $[+$Tense] feature of INFL with the help of prepositions like mee ‘with’, voor ‘for’, and deur ‘by’. From the present point of view, this is to say that the feature $[+$Tense] of T is responsible for nominative case checking in West-Flemish. It then appears that φ-features have nothing to do with nominative case assignment or checking in the language. In this respect, West-Flemish behaves just like Modern Greek and at the same time, contrasts with Portuguese-type languages.

We have so far argued that in West-Flemish, the so-called NCI constructions with a nominative subject exhibit the properties of pure finite clauses and simultaneously resemble pure non-finite clauses: they license the occurrence of a tense-dependent focus marker, tet, and are free to select their own tense and time-adverbials. This fact is attributed to their tensed but AGR-less INFL. It is also claimed that in the absence of φ-features, the feature $[+$Tense] has the property of assigning or checking nominative case in West-Flemish.

To summarize this section, following the reasoning employed in the previous section, we have taken a close look at nominative case phenomena
in marked clauses in Modern Greek and West-Flemish. It has been argued that nominative case in these languages co-occurs with the [+Tense] feature, not with φ-features. We have reached this conclusion on the following grounds. The subject of the so-called na-clause in Modern Greek is ECMed and bears accusative case when the clause is untensed. When the [+Tense] feature exists in the clause, its subject is not subject to ECM and carries nominative case. Likewise, the subject of what is called the nominative-cum-infinitive (NCI) construction in West-Flemish has nominative case, where INFL in such clauses is claimed to be tensed but AGR-less.

5. Toward Parameterization of Nominative Case Checking
It has been shown in sections 3 and 4 that nominative case is exclusively correlated with φ-features in Portuguese-type languages, while it is completely dependent on the [+Tense] feature in English-type languages. Given this, it is clear that the minimalist claim (Chomsky 1995:255 and 351) that nominative case feature checking is an intrinsic property of the [+Tense] feature of T across languages is too strong to be universally held. In other words, conceptually simple though it may be, the exclusively [+Tense]-based minimalist theory of nominative case checking gives no principled account to nominative case phenomena observed in Portuguese-type languages that are too systematic to be exceptional cases to the theory. It is also impossible to say that φ-features in place of the [+Tense] feature check off the nominative case feature because this then leaves the nominative case phenomena in English-type languages unexplained. Given this state of affairs, it becomes clear that it is a false move to strongly link nominative case checking with a specific property of T, φ- or [+Tense] features, across languages.

As a matter of fact, nominative case theory in generative grammar has never been without problems since its birth in the sense that under no version of the theory can both Portuguese-type and English-type languages be successfully and simultaneously explained. This claim is supported by the fact that Chomsky himself has put forward different versions of nominative case theory on the way to minimalist syntax. He assumes in On Binding (OB) (1980:25) that nominative case is assigned under government by [+Tense], but changes his mind one year later in Lectures on Government and Binding (LGB) (1981:170), saying that it is AGR that assigns nominative case under government. This shift from [+Tense] to AGR is reversed in minimalist
syntax, as we can see from the principle that the feature [+T] is universally responsible for eliminating the nominative case feature of DPs. To the extent that there are in principle four possible clause types in terms of the featural make-up of INFL, i.e., tense and agreement, none of the above versions of the theory is satisfactory. To be more specific, Portuguese-type languages do not receive any promising account under the OB version, while English-type languages are problematic in the LGB version. Under the minimalist theory, the problem noted in connection with the former persists since its basic idea is that of the OB framework. In short, all the versions of nominative case theory mentioned above meets with difficulties in giving a uniform account to the empirical data.

A survey of the generative literature on nominative case assignment also reveals that facts are more diverse than can be covered in the standard nominative case theory. As a result, a number of different proposals as to the case assignment mechanism and case assigner have been advanced to account for a variety of nominative case phenomena. Among several candidates that have been claimed to be responsible for nominative case are Fehri's (1989:102) verbal I for Arabic, Siddaramaiah's (1994:38) INFL category of any kind for Kannada, Singh's (1994:161) head of such functional projections as aspect, mood, and auxiliary for Hindi. Each of these candidates may be a reasonable option from a descriptive and empirical viewpoint, but each is closely tied to a particular language. Where languages in general are concerned, none of the options looks attractive: theoretically, all the candidates are too unconstrained and unprincipled to be learnable and empirically, they cannot answer the question of why there is a systematically contrasting pattern between Portuguese-type and English-type languages. This fact suggests that it is somewhat misleading to follow any one of the above-mentioned approaches.

As matters now stand, the current minimalist nominative case theory cannot account for nominative case phenomena in Portuguese-type languages and no other comparable alternatives are available. Given this state of affairs, I propose a parameterized theory of nominative case checking (39), based on the observation that the occurrence of nominative case and its checking depend on the [+Tense] and φ-features of T in English- and Portuguese-type languages, respectively. Under this proposal, the problem noted above receives a natural and systematic account that is otherwise unexplained. The theory pursued here goes as follows:
(39) Parameterization of Nominative Case Checking
The [+Tense] feature of T checks off the nominative case feature in English-type languages, while $\phi$–features of T assume such a role in Portuguese-type languages.

Parameterized theory (39) elaborates the minimalist theory of nominative case without harming its idea that AGR is a locus of $\phi$–features, not a separate category across languages. Unlike minimalist theory, it however assumes that $\phi$–features differ from one language to another in terms of their ability to check the nominative case feature.

Pursuit of (39) suggests that the case feature of case checkers is not necessarily intrinsic in contrast to that of case checkees. I claim that this is indeed the case and elaborate the first half of Chomsky’s (1995b:235-238 and 277) statement that T and transitive V have an obligatory and intrinsic case checking feature that is listed in the lexicon, while DPs come by their case feature in transition from the lexicon to numeration. This amounts to saying that finite T in English-type languages intrinsically bears the nominative case checking feature, whereas its counterpart in Portuguese-type languages, lacking such an intrinsic property, obtains the feature in question from $\phi$–features on its way to the numeration. What is of importance is that the existence of $\phi$–features does not matter in the former and neither does the [+Tense] feature in the latter when the case property of T is at issue.

This section was an attempt to uniformly account for the nominative case phenomena under discussion in conformity with the fundamental mechanisms of minimalist syntax. To this end, I have advanced a proposal that nominative case checking is parameterized in such a way that [+Tense] and $\phi$–features of T respectively check off the nominative case feature in English- and Portuguese-type languages. The claim was also made that when T is finite, it has its nominative case checking feature intrinsically in the former, while it obtains such a feature from $\phi$–features in transition from lexicon to numeration in the latter.

6. Summary
On the grounds that nominative case is correlated with $\phi$–features in Portuguese-type languages, while it goes with the [+Tense] feature in English-
type languages, this paper has argued that the minimalist case theory that
nominative case checking is an intrinsic property of the [+Tense] feature of T
across languages is too strong to be universally held. In the same vein, it also
has proposed a parametrized theory of nominative case checking, which says
that the [+Tense] feature of T checks off the nominative case feature in
English-type languages, while it is $\phi$-features of T that assume such a case
checking role in Portuguese-type languages.

Section 2 has outlined the [+Tense]-oriented minimalist nominative case
theory and the drive to eliminate AGR from the lexicon. Section 3 has
demonstrated that there is a close bond between nominative case and $\phi$-
features, not the [+Tense] feature, in Portuguese-type languages. Arguments
to this end have been based on the following observations: subjects in
untensed but agreeing clauses are in the nominative case in such languages as
Brazilian and European Portuguese, Berber, and Korean; subjects in
embedded tensed but unagreeing clauses always carry accusative case due to
ECM and can further undergo passivization, bearing nominative case. To the
contrary, section 4 has shown that nominative case is closely correlated with
the [+Tense] feature and is irrelevant to $\phi$-features in English-type languages.
The evidence to this effect has come from the following facts: subjects of the
so-called na-(agreeing) clause in Modern Greek bear accusative case as a result
of ECM when it lacks tense, but they carry nominative case when the [+Tense]
feature exists in the clause; subjects of what are called nominative-cum-
infinitive (NCI) constructions in West-Flemish have nominative case, where
NCIs are claimed to be tensed but unagreeing clauses. With a parameterized
theory of nominative case checking, section 5 has elaborated the [+Tense]-
dependent minimalist nominative case theory and successfully accounted
for the two contrasting patterns of nominative case phenomena. As opposed
to Chomsky's (1995b:235-238 and 277) assertion that the case feature of case
checkers is always intrinsic cross-linguistically, it has also been claimed that
the case feature of T in English-type languages is intrinsic and listed in the
lexicon, whereas such a feature is added to T by $\phi$-features in Portuguese-type
languages as T is drawn from the lexicon to the numeration.
References


The effect of stress on vowel length in Aleut

Lorna Rozelle

1 Introduction

1.1 Objective

This study investigates the effect of stress on contrastive vowel length in Aleut. Although duration is typically one of the physical correlates of stress, (Fry, 1955; Crystal and House, 1988; i.a.), Berinstein (1979) claims that languages with contrastive vowel length do not use duration as a correlate of stress. Two main questions are addressed: Is duration a physical correlate of stress in Aleut? If so, does the change in duration caused by stress neutralize the phonemic length contrast between long and short vowels? A third question is also addressed: Does stress assignment precede or follow the process of final syllable deletion?

To determine whether duration is a correlate of stress, the durations of short vowels in stressed and unstressed positions and of long vowels in stressed and unstressed positions were measured. According to these measurements, stressed vowels are longer than their unstressed counterparts; thus, duration is a correlate of stress in Aleut, counter to the claim of Berinstein (1979). To determine whether stress neutralizes phonemic length contrast, the duration of short stressed and long unstressed vowels were compared. Short stressed vowels were shorter than long unstressed; hence, contrastive ratios are maintained even under the influence of stress. Finally, words in which final syllables have been deleted were examined. It appears that stress is assigned before the deletion of the final syllable.

1.2 Aleut

Aleut is the smallest branch of the Eskimo-Aleut language family. It is spoken in the United States on the Aleutian and Pribilof Islands in the Bering Sea by fewer than 1,000 speakers and in Russia on the Commander Islands by fewer than 100 speakers. There are two major, mutually intelligible dialects, Eastern and Western, both of which have subdialects. The Pribilof Island dialect spoken by the subjects for this study is classified as a western subdialect of Eastern Aleut (Bergsland, 1991).

Underlyingly, Aleut has three vowels, / i /, / u /, and / a /, all of which can be both long and short. Examples of length contrasts producing lexical distinctions are shown in (1). Words are written in the standard orthography; long vowels are written as two vowels; stress is not marked. In the transcription, length is indicated by a colon and stress by a diacritic over the vowel.

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1 I want to thank Alice Taff for all her help, not the least of which was collecting the data.
2 "Duration" is used to refer to the physical measurement of time, while "length" is used to when refer to the phonological categorization of duration.
Aleut has a quantity sensitive stress system. Taff (1992) states weight is assigned at the nuclear level so that consonants are weightless. Syllables containing long vowels are heavy, and syllables containing short vowels are light. Main stress falls on the ultimate syllable if it is heavy and the penultimate syllable is light, (2a). Otherwise, main stress falls on the penultimate syllable, (2b and 2c). Both long and short vowels can be in the stressed penult or in the unstressed ultima.3

The situation is still more complex. Bergslund (1994) says, "Stress in Aleut is somewhat indeterminate and difficult to define, depending upon several factors ... Stress, in turn, may affect the length of vowels and consonants." Although length is contrastive, the durational effect of stress appears to neutralize the length distinction. According to Taff (1992), a stressed short vowel can sound long, as in (3a), and an unstressed long vowel can sound short, as in (3b).

1.3 Previous research

Stress and its phonetic correlates in English have been well-studied. Although it is unknown whether the findings of these studies apply to Aleut, they give us an idea of the range of factors that influence stress. Fry (1955) determined that duration is a more effective cue to stress than intensity; Fry (1958) determined that pitch is an even more effective cue than duration. Other studies, such as Peterson and Lehiste (1960), Umeda (1975), and Crystal and House (1988) have measured vowel duration in English in various phonological environments, including stress. Adams and Munro (1978) determined that duration is the most frequent cue to stress for their subjects. Their study is distinctive in that it analyzed stress cues for words in complete sentences rather than words in isolation. They ask what "distinguishes stressed from unstressed syllables in the stream of speech. ... [W]hat does a speaker do that causes the listener to receive an impression of stress?"

Since vowel length is not phonemic in English, none of these studies address the issue of neutralization of phonemic vowel length. Bond (1991) measured vowel duration in Latvian, a language with phonemic vowel length, and concluded that

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3 An "unstressed" syllable is any syllable not receiving main stress.
contrastive ratios are maintained in spite of adjustments that occur for reasons of stress, morphology and syntax. She suggests that "...adjustments in duration may be universal in the phonetic structure of languages, but these adjustments have language-specific and different implementations."

Beckman (1986) compared the phonetic correlates of stress in English and Japanese. She concluded that these systems differ in that the Japanese stress system uses pitch as a correlate of stress to a greater extent than English, hence accounting for the traditional distinction between these so-called "pitch" accent and "stress" accent systems. However, since it is again the case that neither of these languages uses pitch contrastively, Beckman (1986) does not address the question of the neutralization of a contrast by stress. However, this study is relevant in that it shows that the extent to which one of the phonetic cues to stress is used can vary cross-linguistically.

Berinstein (1979) examined the interaction between stress and vowel length in K’ekchi, a Mayan language with distinctive vowel length for unstressed vowels. In a perception experiment she synthesized four syllable tokens of the form [blblblbl]. The duration of three of the four vowels was 100 ms, while the duration of one of the vowels was one of six durations: 70, 100, 120, 140, 160, 200 ms. The location of the syllable with varying length could be in first, second, third or fourth position in the token. Subjects were asked to judge which syllable was stressed. Berinstein concluded that English speakers used both position and duration as cues to stress, while K’ekchi speakers used only position. Increases in duration had no influence on the perception of stress for K’ekchi speakers. In a production study, Berinstein elicited twenty words varying in vowel quality, stress and phonemic length and measured vowel duration via spectrographic analysis. She found that short vowels are not lengthened by stress. Hence, she concluded that duration is not a correlate of stress in K’ekchi, and she hypothesized that all languages with phonemic length do not use duration as a correlate of stress.

2 Method

2.1 Equipment and method

Data from subject ML was recorded with a PMD 430 Marantz cassette tape recorder and Electro-voice D054 dynamic omni-directional microphone in the subject’s home and in a classroom. Data from the other three subjects, BS, LM, and GF, was recorded in home settings on DAT equipment with a flat frequency response throughout the auditory range, using a close-talking, noise-canceling microphone so that the signal to noise ratio was always better than 40 dB. Some of the recordings were made on back-up equipment, an analog recorder, which had a measured frequency response that was flat +/- 3 dB from 70 Hz to 10,000 Hz. For all data, vowel duration was measured from the spectral analysis produced on a Kay CSL 4300B speech analysis system.

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4 Berinstein was unable to construct examples with stressed long vowels. Apparently long vowels do not appear in both stressed and unstressed positions in K’ekchi.
In measuring vowel length, the section of the spectrogram where formant structure was visually identifiable was listened to. If necessary, the range was narrowed until none of the preceding or following consonants were audible, eliminating on and off glides and measuring only the steady state formant structure in order to mitigate the influence of surrounding consonants on vowel length. Figure (4) shows the waveform, transcription and spectrogram of auluxtaadaxti, ii [auluxtaadaxti:] ‘Did (the girls) laugh?’ The intervals that were measured are indicated.

In order to check the accuracy of the measurements, a random sample of vowels was measured by another phonetician. This person was given the instructions in the preceding paragraph but worked independently. Approximately seven percent of the data was checked. These measurements were compared to the corresponding measurements that had been make previously by the author. The difference between the means of the two sets of measurements was just 3 milliseconds.

2.2 Subjects

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5 The transcription beneath the waveform is narrower than the transcription in the text.
This analysis is based upon the speech of four subjects. All subjects are adults who were born on the Pribilof Islands. They learned Pribilof Aleut as their first language and also speak English. BS, a man in his early 70’s, speaks Aleut at home with his wife and with his peers. LM, a woman in her late 60’s, speaks Aleut daily with her peers. GF, a man in his early 50’s, is in the transition generation. The generation before his learned Aleut as their first language, while the generation after learned English. He eagerly speaks Aleut with his peers but mostly uses English at home as his wife understands but does not speak Aleut. BS, LM and GF have lived on the Pribilof Islands all their lives. The fourth subject, ML, is a man in his mid 80’s. Although ML has been living off of the Pribilof Islands for several years, he speaks Aleut daily with his wife, who is also a native speaker.

2.3 Materials

Many factors influence vowel duration besides distinctive length and stress. Some of these factors are vowel quality, post-vocalic voicing, post-vocalic place of articulation (Peterson and Lehiste, 1960), speaking rate (Crystal and House, 1982), word length (Lehiste, 1972), morphological structure (Bond, 1991), prepausal position (Umeda, 1975; Crystal and House, 1988), and word prominence (the information load the word carries in the message) (Umeda, 1975). According to Peterson and Lehiste (1960) and Umeda (1975) the prevocalic consonant has no consistent effect on vowel length in English. Another factor, perhaps similar to rate of speech, is whether measurements are made of connected speech or of isolated citation forms. The influence of all but the last of these factors on vowel duration in English has been well-documented; however, their influence in other languages has been studied less, and in Aleut, not at all. In order to mitigate these potential confounds all three Aleut vowels were measured in a variety of phonological, morphological and syntactic environments in two different elicitation tasks. Though it is possible that whether the word was part of a connected speech or was an isolated citation form will affect the results, for the purpose of this pilot study data from different sources has been pooled.

The measured vowels have three different sources. The first is a connected narrative of approximately two minutes elicited from subject ML who was instructed to tell a short story about something. The second source of data is a set of tapes from a field methods class in which citation forms were elicited from ML. The stimulus was an English word. The response was an Aleut word. Words were often repeated several times, allowing several measurements of the same word to be made. Multiple measurements of the same word were averaged. Repetitions which seemed unnaturally slow were not used. The third source of data is a set of sentences elicited from each of three subjects, BS, LM and GF. The stimulus was an

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6 Although Ladefoged (1993) states that “an absolute minimum of three people of each sex is essential,” a sampling of actual studies have used one (Hovdhaugen, 1992) to six subjects (Peterson and Lehiste, 1960).

7 This data was collected by Peter Ladefoged and Alice Taff compliments of NSF Grant Number 951118 “Phonetic Structures of Endangered Languages” awarded to Peter Ladefoged and Ian Maddieson and is available from the UCLA Phonetics Archive. Alice Taff also transcribed the data and filed it on the computer.
English sentence, the response the Aleut translation. The stimuli were designed without regard for vowel length, so include a realistic sampling of long and short vowels in stressed and unstressed positions. Although the responses were not uniform across speakers, no amendments were suggested so that the responses remained as natural as possible. When sentences were repeated, corresponding measurements were averaged.

Every vowel from each source was measured, although not all measurements were included in the analysis. Certain measurements were excluded for two reasons. First, vowels next to glides or voiced velar or uvular fricatives were often excluded because in these cases it was difficult to determine the beginning or end of the vowel. Second, Aleut has an optional process in which final syllables can be deleted. As the interaction between deletion and stress assignment is one of the questions to be addressed, words in which deletion has occurred were not included in the primary data set.

3 Results

Table (5) summarizes the means and standard deviations for short and long vowels in stressed and unstressed position. (6) shows a chart of the same data.

<table>
<thead>
<tr>
<th></th>
<th>short</th>
<th>long</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>stressed</td>
<td>78 ms</td>
<td>151 ms</td>
<td>mean</td>
</tr>
<tr>
<td></td>
<td>29 ms</td>
<td>44 ms</td>
<td>standard deviation</td>
</tr>
<tr>
<td></td>
<td>99</td>
<td>84</td>
<td>number of tokens</td>
</tr>
</tbody>
</table>

| unstressed | 64 ms | 130 ms | mean  |
|            | 22 ms | 27 ms  | standard deviation |
|            | 317   | 38     | number of tokens   |
Vowel duration in milliseconds: mean +/- standard deviation

First, consider the difference between short and long vowels. When not stressed, short vowels average 64 ms while long vowels average 130 ms. The duration of a long vowel is 2.0 times that of a short vowel. Similarly, when stressed, short vowels average 78 ms, while long vowels average 151 ms. The duration of a long vowel is 1.9 times that of a short vowel. Thus, the ratios of the duration of long to short vowels supports the theoretical notion that a long vowel occupies two timing slots while a short vowel occupies only one (McCarthy, 1979).

Second, consider the effect of stress on duration. The duration of a short vowel is 64 ms when not stressed and 78 ms when stressed. The duration of a long vowel is 130 ms when not stressed and 151 ms when stressed. Given the variation in the data, are these differences significant enough to say that stressed vowels are longer than unstressed vowels?

Since the data sets do not have normal distributions, the non-parametric Mann-Whitney rank sum test was used to compare means (Snedecor and Cochran, 1980). The null hypothesis is that the means of the data sets are the same. Rejection of the null hypothesis implies that one set has a higher mean than the other. Application of the rank sum test on the sets of short stressed and short unstressed vowels as well as on the sets of long stressed and unstressed vowels shows that the null hypothesis is rejected with P ≤ 0.01 in both cases. The conclusion is that stress does affect vowel duration; hence, duration is a correlate of stress in Aleut.

Third, let us consider whether the effect of stress on duration obscures phonemic length contrast. The duration of a stressed short vowel averages 78 ms while the duration of a long unstressed vowel averages 130 ms. Again, given the variation in the data, are the durations of these two sets of vowels significantly different? Application of the rank sum test allows us to reject the null hypothesis with P ≤ 0.01 and conclude that the two means are different. Thus, although stress
affects duration, it does not destroy the length contrast between a long and a short vowel, even when the short vowel is stressed and the long vowel is not.

To further verify the significance of these results, variation between subjects was examined. The chart in (7) shows that the results for all four subjects are similar. Subject GF speaks more quickly than the others, so his line is lower, but it has the same slopes.

(7) Comparison of the means of subjects' durations in milliseconds

The durations of short stressed and unstressed vowels for all subjects is very similar. A power test was performed on the means of the durations of short stressed and unstressed for each subject. It showed that in order to detect a twenty percent increase in duration between short unstressed and stressed vowels, only .5 speaker was required, indicating that the intersubject variability was very small. As is clear from the chart in (7), there is more intersubject variability for the long vowels. In particular, while subject BS does lengthen long vowels under stress (128 ms for long unstressed vowels; 137 ms for long stressed vowels), he does not lengthen as much as the other subjects do nor as much as he does for short vowels. Including BS in the power test shows that in order to detect a twenty percent increase in vowel duration, it is necessary to use 4.6 subjects instead of the four actually used in this study. However, if BS is excluded and only the data from the other three subjects are analyzed, only 2 subjects are necessary, indicating that there is little intersubject variability amongst the other three subjects.  

---

8 The means over all vowels for each subject excluding citation forms are as follows: GF 75 ms, BS 82 ms, LM 84 ms, ML 86 ms.

9 Kehoe, et. al. (1995) reports, "Across all age ranges, there was great diversity in how individual subjects employed different phonetic parameters. Some subjects employed certain acoustic parameters over others, that is, employed duration only rather than f0, or employed f0 only rather than duration." It is possible that BS employs duration to a lesser extent than the other subjects for.
Final syllable deletion

Final syllables are frequently deleted in Aleut. Does the word receive stress before or after the final syllable is deleted? (The stress rule was given in section 1.2.) For some words, the question of order is irrelevant. For example, when the final syllable is deleted, ayagaadaŋ ‘girl’ is stressed on the penultimate syllable regardless of the order of application of these two rules; see (8a).

\[(8)\]
\begin{align*}
\text{a.} & \quad /\text{ayayːaːdaŋ} / \quad /\text{ayayːaːdaŋ} / \\
& \quad \text{stress: ayayːaːdaŋ} \quad \text{final deletion: ayayːaːdaŋ} \\
& \quad \text{final deletion: ayayːaː} \quad \text{stress: ayayːaː} \\
& \quad [\text{ayayːaː}] \quad [\text{ayayːaː}] \\
\text{b.} & \quad /\text{ivaŋtanaŋ} / \quad /\text{ivaŋtanaŋ} / \\
& \quad \text{stress: ivaŋtanaŋ} \quad \text{final deletion: ivaŋtanaŋ} \\
& \quad \text{final deletion: ivaŋtə} \quad \text{stress: ivaŋtə} \\
& \quad [\text{ivaŋtə}] \quad [\text{ivaŋtə}] \\
\end{align*}

However, for other words, the two orders yield two different outputs. For example, see (8b). In igaŋtanaŋ ‘airplane,’ if the word receives stress before the final syllable is deleted, the penultimate syllable is stressed: [ivaŋtə]. But, if the final syllable is deleted before the word receives stress, the antepenultimate syllable is stressed: [ivaŋtə]. Since duration is a strong correlate of stress in Aleut, examination of vowel duration provides an objective, phonetic way to determine which syllable is stressed. The data collected contained 21 examples of final syllable deletion. Of these, nine were of the ayagaadaŋ type, which are stressed the same regardless of the order of application of the two processes. Of the remaining twelve, four were repetitions whose measurements were averaged, and one was only two syllables. A summary of vowel durations in milliseconds for each of the seven words is shown in (9). The syllable that was deleted is underlined.

\[\text{marking stress in long vowels. If this is the explanation, it is unclear, however, why he employs duration for marking stress in short vowels.}\]
(9)  

<table>
<thead>
<tr>
<th>Word</th>
<th>Antepenult</th>
<th>Penult</th>
<th>Ultima</th>
</tr>
</thead>
<tbody>
<tr>
<td>igaχtanaχ</td>
<td>66</td>
<td>48</td>
<td>67</td>
</tr>
<tr>
<td>iχtada</td>
<td>64</td>
<td>104</td>
<td>Ø</td>
</tr>
<tr>
<td>kumsiχtadan</td>
<td>x</td>
<td>55</td>
<td>79</td>
</tr>
<tr>
<td>kumsiχtakun</td>
<td>x</td>
<td>64</td>
<td>71</td>
</tr>
<tr>
<td>kumsiχtalix</td>
<td>43</td>
<td>45</td>
<td>57</td>
</tr>
<tr>
<td>qaxchiklukuχ</td>
<td>53</td>
<td>36</td>
<td>49</td>
</tr>
<tr>
<td>qaxchiklulakaχ</td>
<td>50</td>
<td>46</td>
<td>88</td>
</tr>
</tbody>
</table>

In each of these words, if the word receives stress before the final syllable is deleted, the penultimate syllable will be stressed. If, on the contrary, the final syllable is deleted before the word receives stress, the antepenultimate syllable will be stressed. All vowels are short, and in each case, the vowel with greatest duration is the penultimate, not the antepenultimate, indicating that the penultimate syllable is stressed. Thus, words receive stress before the final syllable is deleted.

Additional support for the conclusion that final syllable deletion occurs later is found in the nature of the process. This process has one of the characteristics of a post-lexical rule: it can have variable output (Kiparsky, 1985). Sometimes the final syllable does not delete, sometimes it deletes entirely, as shown in (10a), and sometimes it only devoices, as shown in (10b).

(10) a. 

![Graphical representation of the data](image-url)
5 Discussion

One question that this study raises is why, according to other researchers, are short stressed and long unstressed vowels difficult to distinguish in Aleut, even though they are phonetically distinct? This question is all the more puzzling when one considers the difference between vowel durations shown in (11). The greatest difference in duration occurs between short stressed and long unstressed vowels: a long unstressed vowel is longer than a short stressed vowel. Moreover, upon reexamination, the chart in (6) shows that, despite the variation in the data, the indicated ranges of durations for short unstressed vowels and long unstressed vowels overlap only slightly.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>11</td>
<td>a.</td>
<td>short stressed - short unstressed</td>
</tr>
<tr>
<td></td>
<td>b.</td>
<td>long stressed - long unstressed</td>
</tr>
<tr>
<td></td>
<td>c.</td>
<td>long unstressed - short stressed</td>
</tr>
</tbody>
</table>

One possible explanation for the difficulty in distinguishing short stressed and long unstressed vowels is that speakers of languages that do not use length phonemically, such as English, are not adept at perceiving length contrasts, regardless of the role of duration in the manifestation of stress. Yet, Bergsland, the author of the Aleut
Dictionary, is a native speaker of Norwegian, a language that uses length contrastively. Also, Fox and Lehiste (1989), in a perceptual experiment, tested the abilities of English and Estonian speakers to distinguish three different durations. Although Estonian is controversially analyzed as exhibiting a three-way length contrast, Estonian speakers do no better than English speakers at distinguishing these durational distinctions. Hence, it seems unlikely that Aleut speakers can distinguish four different durations, short unstressed, short stressed, long unstressed and long stressed, and unlikely that English speakers confuse short stressed and long unstressed vowels due to an inability to perceive duration.

Alternatively, perhaps stress in Aleut does lengthen vowels, but to a lesser degree than it does in other languages. It might be the case that languages that use length contrastively use duration as a weaker correlate of stress than languages that do not use length contrastively. This is a weakening of Berinstein’s (1979) claim that languages that use length contrastively do not use duration as correlate of stress. A preliminary search suggests that this hypothesis is correct. In Aleut, the ratio of the durations of stressed to unstressed vowels is 1.2, whether the vowels are long or short. In Latvian, another language with length contrasts, the ratio of stressed to unstressed vowels is 1.3 for both long and short vowels (Bond, 1991). In K’ekchi, the ratio of stressed short to unstressed short vowels is 1.0 (Berinstein, 1979). In contrast, in a language without length contrasts, like English, the ratio is much greater, 1.6 or 1.7 (Fry, 1955 and Crystal and House, 1988, respectively). Further acoustic analysis is necessary to confirm or deny this hypothesis. In addition, it would be illuminating to access native speakers’ abilities to distinguish long and short vowels in stressed and unstressed positions in perception experiments to determine their sensitivity to durational distinctions in various languages.

In summary, stress manifests itself in various ways. Not only is stress without consistent phonetic correlates even within a single language (Hayes, 1995), but also the phonetic correlates that have been identified as significant in English are used phonemically in other languages. This acoustic analysis of Aleut shows that duration is indeed a robust correlate of stress, used even in languages that use length phonemically. Moreover, the use of duration as a correlate of stress does not compromise the phonemic use of duration. These measurements also provide phonetic verification of Bergsland’s transcriptions of vowel length as well as Taff’s stress rule. The vowels transcribed as long in the dictionary are about twice as long as those transcribed as short. Likewise, the vowels that Taff’s stress rule assigns main stress are about twenty percent longer than those not assigned main stress.

6 References


DP predicates in Basque

Xabier Artiagoitia

0. Introducing the Basque article

The Basque article, with its -a/-ak morphs for singular and plural respectively, is a suffix on the rightmost element inside a Determiner Phrase (DP henceforth), as can be seen in (1):

(1)  a. Tren-a
     train-art\textsuperscript{1}
     'the train'

     b. Tren urdin-a
        train blue-art
        'the blue train'

     c. Tren-ak
        train-art
        '(the) trains'

     d. Tren urdin-ak
        train blue-art
        '(the) blue trains'

     e. ardo-a
        wine-art
        '(the) wine'

     f. ardo beltz-a
        wine black-art
        '(the) red wine'

One interesting property of Basque DPs noted in Laka (1993) and Artiagoitia (1997) is that the presence of an overt D seems obligatory. This observation becomes clear when one looks at plural count nouns and mass nouns, examples of which are given in (2); as long as it remains in internal argument position, a

\textsuperscript{1} Abbreviations used in this article include: art = article, Asp = Aspect, comp = complementizer, dat = dative, E = ergative, lit = literally, Num = Number, Po = postposition.
DP can be interpreted as either a specific description or as an existentially quantified expression, as the corresponding glosses below show:

(2)  
a. Tren-ak  iritsi  dira  
    train-art  arrived  aux  
    'The trains arrived'

b. Tren-ak  ikusi  ditut.  
    train-art  seen  aux  
    'I have seen (the) trains'

c. Tren-ek  aurreratu  gaituzte. (trenek < *tren + ak + ek)  
    Trein-art-E  passed  aux  
    'The trains have passed us' but * 'Trains have passed us'

d. Ardo-a  edan  dut.  
    wine-art  drunk  aux  
    'I drank (the) wine'

It is only in (2c), where we find a plural ergative subject, that we cannot get the existential interpretation for the DP. But leaving (2c) aside, we can safely say that in Basque there is no syntactic difference between what is translated in English as bare mass nouns/bare plurals and the corresponding definite noun phrases displaying the presence of the article, because all Basque DPs must have an overt determiner.

Longobardi (1994) (cf. also Contreras (1986)) points out that DPs with empty Ds in Romance are restricted to internal argument positions; precisely these determinerless DPs are interpreted as existentially quantified expressions. Note that Romance and Basque share the same restriction as far as interpretation goes (i.e. existentially quantified DPs are confined to internal argument position), but Basque has an overt D in cases where Romance licenses an empty D position. The only exception to the presence of an overt D are DPs headed by quantifiers:

(i)  
Hiru tren  heldu  dira.  
three train  arrived  aux  
'Three trains have arrived'

In this case, the article makes the DP specific:

(ii)  
Hiru tren-ak  heldu  dira  
    The train-art  arrived  aux  
    'The three trains have arrived'

Generic DPs also require the presence of an overt D:

(iii)  
Tren-ak  dibertigarriak  dira  
    train-art  fun  aux  
    'Trains are fun' or 'The trains are fun'
The subject matter of this paper, however, is the less studied fact that the Basque article appears on some predicate nominals and, more surprisingly, on some predicate adjectives. It is not true, nevertheless, that the article shows up in all cases of nominal or adjectival predication as the reader can verify by comparing (3a-b) with (3c):

(3) a. Atxaga idazle-a da eta bere lagunak argazkilarri-ak dira.
   writer-art is and his friends phographer-art are
   'Atxaga is a writer and his friends are photographers'

b. Atxaga jatorr-a da eta bere lagunek ere jatorr-ak ematen dute.
   friendly-art is and his friends-E too friendly-art give aux
   'Atxaga is friendly and his friends seem friendly too'

c. Atxaga lasai (-a) dago / Atxaga lasai (-a) joan da calm-art is calm-art gone aux
   'Atxaga is calm' / 'Atxaga left calm'

The prevalent view for some Basque scholars (e.g. Irigoyen 1985) and general belief among Basque speakers seems to be that (3) is due to the influence of the Romance number inflection. Although there might be some truth to this belief (e.g. Michelena (1978) shows that the presence of articles on predicates is a relatively recent phenomenon in the language), I claim here that this view cannot be right in toto; I will argue instead that predicates with articles are true DP predicates and, then, examine the implication of the existence of DP predicates as well as the existence of AP and NP predicates.

The steps I shall follow are four: first, I will examine the distribution of predicate nominals and adjectives in Basque, both with and without article, and try to come up with the right generalizations regarding the distribution of predicates with articles. Second, I will give arguments for the DP status of predicates headed by articles. Third, I will comment on the relevance of the existence of DP predicates for the DP hypothesis. And fourth, I will discuss what determines the difference between DP and AP/NP predicates: after reviewing some previous proposals by Stowell (1989, 1991a) for English and Zabala (1993) for Basque, I shall claim based on -but departing in crucial ways from- Zabala's proposal that the [+DP] c-selection feature is needed to predict the distribution of DP predicates, which are in turn interpreted as individual-level predicates.
1. Distribution of nominal and adjectival predicates in Basque

In this section, I study what the distribution of the predicates with and without article is and what the right generalizations about the data are. The empirical basis of the article is crucial because some speakers believe indeed that it is hard to draw a line between cases where the article is obligatory on the predicate and cases where it is impossible. All examples are from Standard Basque and are in principle valid for all dialects except for Northeastern dialects (mainly Souletin Basque).

1.1. Predicate nominals
1.1.1. Articleless predicate nominals

Predicate nominals never display the article as complements to the copula verb egon 'stay, be', a verb that is similar to Spanish estar:

(4) Baserria salgai(-a) dago.
    farmhouse sale-product stays
    'The farmhouse is on sale' (lit: 'The farmhouse stays sale-product')

There are also other verbs which require that their predicate nominal complement appear without article, for example jarraitu 'continue':

(5) Jonek eta Ainhoak irakasle(-ak) jarraitzen dute aurten.
     -E and -E teacher continue aux this year
     'Jon and Ainhoa continue as teachers this year'

A third major case of predicate nominals without articles comes from object-oriented secondary predicates, standard cases of small-clause complements:

(6) a. Ainhoa irakasle(-a) nahi dugu.
     teacher want aux
     'We want Mary as our teacher'

b. Chiapuccik Indurain irabazle(-a) ikusten du.
     -E winner see aux
     'Chiapucci sees Indurain as a winner'
c. Lankideek Jon sailburu(-a) aukeratu dute elected
       'His colleagues have appointed Jon chairperson

Finally, subject-oriented adjunct predicate nominals never display the presence of the article, as can be observed in (7):

(7) a. Jon Ameriketara joan zen artzain(-a)
       America-to gone aux shepherd
       'Jon went to America as a shepherd'

       b. Jon eta Ainhoa Donostian daude irakasle(-ak).
          San Sebastian-in stay teacher
       'Jon and Ainhoa are in San Sebastian (acting) as teachers'

1.1.2. Nominal predicates with articles

Predicate nominals with articles are confined to three clear cases; the copula verb izzan 'be' (which is also the auxiliary verb for unaccusative verbs):

(8) Atxaga idazle-a da eta bere lagunak argazkilari-ak dira. (=3a)
       'Atxaga is a writer and his friends are photographers'

Raising verbs like irudi or eman 'seem' (the latter literally means 'give') also require that their predicate nominal complement be with article:

(9) Ainhoaak aktore-a [dirudi / ematen du].
       -E actor-art seems give aux
       'Ainhoa seems an actress'

And, thirdly, verbs that are generally portrayed as epistemic also require the presence of the article on the predicate nominal:

\[\text{\footnotesize 4 There is a handful of frozen, fixed nouns that are used without article with the copula izzan such as goset 'hunger', egarri 'thirst', beldur 'fear', lotsa 'embarrassment':}\]

(i) Jon goset da    'Jon is hungry'    lit: 'Jon is hunger
(ii) Ainhoa beldur da    'Ainhoa is afraid'    lit: 'Ainhoa is fear'

The fact that these are listed exceptions doesn’t alter the nature of the generalization in the text.
(10) a. Atxaga, olerkari-a baino areago, narradore-a iruditu zait beti. poet-art than more narrator-art struck aux always 'Atxaga has always struck me as a narrator rather than as a poet'

b. Atzetik begiratuta, gizon-a iritzi diot. behind looked-Po man-art consider aux 'Looking from behind, I thought [her/him] a man'

It turns out then that the absence and the presence of the article in predicate nominals in modern Basque are not in free variation at all: (4-7) are ungrammatical with the article, and (8-10) are ungrammatical without it.\(^5\)

1.2. Predicate adjectives
1.2.1. Articleless predicate adjectives

Predicate adjectives are also articleless as complements to the verb egon 'stay, be'. The reader should bear in mind, however, that this latter verb can take almost any predicative category as its complement; it can have predicate nominal or predicate adjective complements, but also PP and CP complements:

(11) a. Ainhoa (urduri, gaixo, lasai) (-a) dago (= AP)

'nervours sick calm stays

'Ainhoa is [nervous, sick, calm]'

b. Baserria salgai (*-a) dago. (=NP) (= 4)

'The farmhouse is on sale'

c. Jon (etxean/ Ainhoarekin) dago (= PP)

'home-at -with stays

'Jon is [at home / with Ainhoa]'

d. Jon zer egin ez dakiela dago what do not knows-comp stays

'Jon stands as if not knowing what to do'

(lit: Jon stands that he doesn't know what to do)

The predicate adjective is also determinerless as complement to certain verbs, such as senti(tu) 'feel':

\(^5\) Given the tendency to look back on Old Basque texts, some very educated speakers may find (8-10) without the article marginally acceptable in stilted written style.
(12) Jon larri (-^a) sentitzen da.
    sick feel aux
    'Jon feels sick'

In other cases, the articleless adjective is predicated of the direct object, a
situation typically analyzed as an object small-clause:

(13) a. Zurrumurru horiek Jon eta Ainhoa urduri(-^ak) ipini dituzte.
    rumours those and nervous left aux
    'Those rumours have left Jon and Ainhoa uneasy'

b. Indurateik Chiapucci oso lasai(-^a) ikusten du^6.
    -E very calm see aux
    'Indurain sees Chiapucci very calm'

For clarity, I should point out that the range of verbs that subcategorize for
nominal and adjectival small-clauses need not coincide. Thus, there are verbs like
ipin(i) 'put' which may have both nominal and adjectival predicate complements;
others, like the perception verb nabari(tu) 'notice' only accept predicate
adjectives (as opposed to ikusi(i), cf. (5b) and (13b) above); finally, verbs like
aukera(tu) 'elect' only tolerate predicate nominal complements:

(14) a. Lankideek Jon {urduri / sailburu} ipini dute.
    Colleagues-E uneasy chairperson put aux
    'His colleagues have made Jon {uneasy / chairperson}''

b. Lankideek Jon {urduri / * sailburu} nabaritu dute.
    noticed
    'His colleagues have noticed Jon {uneasy / *chairperson}''

---

^6 There is some oversimplification here in that I am treating all cases of object-oriented secondary
predication as object small-clauses. The reason for this is twofold: first, nothing that I have to say
in this article really depends on distinguishing between object small-clauses and object-controlled
adjunct small-clauses (if the distinction exists at all); and second, I don't see any reason internal to
Basque to treat the following example (i) in a different way from (13):

(i) Jonek kafa eda(-^a) edaten du
    Jon-E coffee hot -art drink aux
    'Jon drinks his coffee hot'

The unmarked order for (i), which would be analyzed as object-controlled adjunct small-clause
by Stowell (1991b), is DIRECT OBJECT-PREDICATE-VERB, just the same as in (13). All tests for
small-clauses (constituency, binding, movement, interpolation of Main Clause Constituents) are
applicable to both structures.
c. Lankideek Jon (*urduri / sailburu) aukeratu dute
   elected
   'His colleagues have appointed Jon (*uneasy / chairperson)

The three-way contrast is, of course, expected if nouns and adjectives are
different categories and are selected independently by each verb.

Finally, subject-oriented adjunct predicates are invariably articleless in
Basque:

    hiking gone aux calm
    'Jon went hiking relaxed'

b. Clintonetek autotik agurtu zuen irribarretsu eta zoriontsu (*-a).
   -E car-from greeted aux smiling and content
   'Clinton greeted from the car smiling and happy'

I now turn to the predicate adjectives which appear with determiners.

1.2. 2. Predicate adjectives with article

   Interestingly enough, the range of contexts where predicate adjectives
appear with the article are exactly the same contexts where predicate nominals
appear with the article, namely: with the copula izan 'be', as complements to the
raising verbs irudi, eman 'seem', and as complements to epistemic verbs. Below I
provide the relevant examples:

Copula izan
(16) Axaga azkarr-a da eta bere lagunak ere oso argi-ak dira.
   smart-art is and his friends too very sharp-art are
   'Axaga is smart and his friends too are very sharp'

Raising verbs
(17) Ainhoa jatorr-a {ematen du, dirudi}
    friendly-art give aux seems
    'Ainhoa seems friendly'
Epistemic verbs

(18) a. Ainhoa eta Jon *azkarr-ak* iruditzen zaizkit.
    and intelligent-art consider aux
    'I consider Ainhoa and Jon intelligent'

b. Zuk egindakoari oso *arriskutsu-a* deritzot.
    you-E done-art-dat very dangerous-art consider
    'I consider what you did very dangerous'

The absolute coincidence of contexts where the predicates display the presence of the article is intriguing if these predicates are simple occurrences of nouns or adjectives (because these two do not in principle share their distribution), but it is not surprising if we attribute it to the common factor, namely the presence of the article. I return to this observation in 1.3 below.

To finish this survey of data on predicates, I should mention that there is one single case where the presence of the article with both predicate adjectives and nominals seems optional, that exemplified by what we may call verbs of change. These include verbs such as *egin, bilaka(tu), bihur(tu)* 'become, turn'. Although the absence of article is usually regarded as 'more correct' and 'less corrupted' in written Basque (specially with predicate nominals), I find nonetheless that speakers use the article with the predicate complements selected by these verbs:

(19) a. Umeak *handi(-ak)* egin dira
    Kids big-art become aux
    'The kids have gotten big'

b. 21 urte zituela, Atxaga *idazle(-a)* bihurtu zen.
    years had-comp writer-art become aux
    'At the age of 21, Atxaga became a writer'

As things stand, this appears to the only case where the article is truly optional, with no change in meaning. Outside (19), the absence and the presence of the article on predicates do not co-occur with the same selecting verb.

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7 In the few cases in which they do co-occur (to be mentioned in section 4.3), I argue that they are selected as different XPs and, consequently, they receive different interpretations.
1.3. Some generalizations

To summarize the data in section 1, we arrive at the following generalizations:

\[(20)\]
\begin{enumerate}
\item Nominal and Adjectival predicates with articles have the same exact distribution (= izean copula, epistemic verbs, and raising verbs).
\item Articleless predicate nominals and adjectives are not selected by the same kind of verbs (= don't always have the same distribution).
\item Adjunct predicates are always articleless Ns or As.
\end{enumerate}

(20a) is somewhat surprising if predicate nominals and adjectives with articles are just nouns and adjectives inflected for number because we do not expect them to share distributional properties. (20b) is precisely what we expect given that predicate nouns and predicate adjectives are of two different categories; sometimes the same verb may subcategorize for both categories (e.g. the verb egon 'stay, be' in (4) and (11), the verb ipin(i) 'put' in (14a)), but sometimes a verb will only select a predicate nominal without selecting a predicate adjective (cf. (14c)) or viceversa (cf. 14b)). Finally, (20c) also deserves some explanation: if the article on predicates is just some number inflection morpheme it is a mystery why predicates with articles should be barred from adjunct positions. I will return to this mystery in section 4.3 below.

For the time being, I will concentrate on (20a) to argue that there is nothing intriguing about (20a) once we take the presence of the determiner (=article) as the relevant common factor. More specifically, I will propose that (20a) obtains because both nouns and adjectives followed by the article are true DPs.

For convenience and clarity, in the remainder of this study I will assume after Stowell (1983) and subsequent work that all cases of predication reduce to the following small-clause structure:
(21) \[ X'' \rightarrow D' [X', X] \] (X = N, A, P and possibly D)

(After Stowell 1983 and subsequent work)

In principle, nothing of what I have to say depends on any specific proposal about the structure of small-clauses and any theory of predication; the notation is used for the purposes of making the relevant points clearer. Having said this, let us turn to argue that predicates followed by the article are true DPs.

2. N and A predicates + article = DPs

Before I develop the proposal that predicate nominals and adjectives bearing the article are true DPs (and thus no wonder they share the same distribution), I would like to first tackle and reject the other possible alternative, namely the view that the article in these cases is just number inflection.

2.1. Why we don't want to say the article is just number agreement

There is a straightforward reason why we don't want to say that the article borne by predicates is simple number inflection. A brief comparison between English and Spanish shows that number inflection obtains for a given predicate category independently of the selecting verb or the complement-adjunct distinction. In Spanish, both nouns and adjectives inflect for number; therefore, all predicate nominals and all predicate adjectives inflect for number as can be seen in the examples in (22). In English, nouns inflect for number but adjectives never do; therefore, all predicate nominals inflect for number and no predicative adjective ever inflects for number, as can be seen in the corresponding translation of the Spanish examples:
In view of the evidence that number inflection is a morphological property of a given category and not a function of the selection by the verb, it would seem strange to argue that certain Basque verbs, but not others, impose number agreement on their predicate complements. In fact, since the number-inflection alternative claims that Basque is simply copying Romance number-inflection on the predicates, it would remain a mystery why Basque does not extend this phenomenon to all predicates, just the same as number-agreement obtains in all predicates in Romance (cf. (22) above).

2.2. Arguments for DP status of predicates with article

There are, however, two strong arguments and a weaker third one which support the claim that predicates headed by the article are true DPs: the possibility of relativization, the similar distribution of DP arguments and predicates headed by the article, and the possibility of coordination.

2.2.1. Relative clause formation

Longobardi (1994) argues that the possibility of relativizing any given DP is dependent on the presence of a Determiner position, whether overt (cf. 23b) or covert (cf. 23c):
(23)  a. * Gianni è medico che si cura davvero dei suoi pazienti.
    b. Gianni è un medico che si cura davvero dei suoi pazienti.
    'Gianni is a doctor who really cares for his patients'
    c. Noi siamo [D 0] medici che ci curiamo davvero dei nostri pazienti
    'We are doctors who really care for our patients'

According to Longobardi’s test, Basque nominal predicates headed by the article
behave as though they contain a Determiner position since they allow
relativization:

      anything do aux-comp writer-art consider aux
      'I consider Atxaga a writer that can do all sorts of things'

Not surprisingly, Basque bare nominal predicates without article do not allow
relativization:

(25)  * Lankideek Ainhoa [arazoak konponduko dituen saibiluru izendatu
      colleagues-E problems solve aux-comp chair appoint
dute
aux
      'Her colleagues have elected Ainhoa chairperson that will solve the
problems'

Needless to say, the most straightforward candidate for the D position in (24) is
the article itself, which is lacking in (25). But we can do even better because the
prediction made by my proposal also obtains with predicate adjectives: those
headed by the article can be relativized yielding a comparative-like structure as
in (26), but those bare predicate adjectives without article cannot be relativized as
(27) shows:

(26)  Hori ulertzekoa da euskaldunok garen burugogorr-ak izanda.
      that understandable is Basques are-comp stubborn-art being
      'That is understandable, being the Basques as obstinate as we are'
      (lit: ... being the Basques the obstinate we are')
(27) * Hori ulertzekoa da Jon dagoen [lasai egonda] that understandable is stay-comp calm staying 'That is understandable being Jon as calm as he is'
(lit: ... staying Jon [calm he stays])

In sum, if relativization is dependent on the presence of a determiner position as Longobardi has argued, the fact that predicate with articles can be relativized but those without articles cannot be relativized lends support to the proposal that predicates headed by articles are true DPs. The most natural assumption to make is that the article itself fills the relevant determiner position.

2.2.2. Distribution: verbs that select predicates headed by the article are those that allow equative sentences with two argument DPs.

The second argument for the DP status of predicates headed by the article is more theory-internal: the three types of verbs (copula izan, raising verbs, epistemic verbs) that select predicates with articles are precisely the ones that may form equative sentences with two DP arguments:

(28) a. Zure auzokoa argazkian agertzen den hau {da / iruditzen zait} your neighbor picture-in appear aux-comp this is consider aux 'Your neighbor [is / seems to me] this person in the picture'

b. Zure auzokoak argazkian agertzen den hau ematen du. your neighbor-E picture-in appear aux-comp this give aux 'Your neighbor seems this person in the picture'

In (28) both DPs are referential expressions, they may freely exchange word-order, and fulfill for most part the relevant criteria for equative sentences (cf. Stowell 1989: 255). Although I do not wish to claim that equative sentences (where the verb is the only true predicate and selects two DP arguments) and sentences with DP predicate complements (cf. sections 1.1.2 and 1.2.2) should be

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8 This is not to say that one cannot make comparatives out of bare predicate adjectives; it is perfectly possible resorting to the degree word bezain:

(i) Hori ulertzekoa da Jon dagoen [bezain lasai egonda] that understandable is stay-comp as calm staying 'That is understandable being Jon as calm as he is'

Comparatives with bezain are possible with predicates regardless of the presence of the article.
analyzed similarly\textsuperscript{9}, it becomes immediately obvious that there is a common
denominator in both types of sentences: some DP (referential expression or
predicate) is always selected, and this common denominator explains why the
three types of verbs are the same for either type of sentence. On the other hand,
an approach which analyzes predicates headed by article as something other
than DPs should regard this distributional fact a pure coincidence and would fail
to capture the obvious parallelism at work here.

2.2.3. Further indirect evidence: coordination

Although the possibility of coordination per se doesn't warrant categorial
identity (semantic factors may also intervene), it is still standardly assumed as a
test for identical constituency. In this respect, it is interesting to note that an
appropriate predicate nominal headed by the article can be coordinated with an
predicate adjective of the right type headed by the article:

(29) a. Zuk esan duzuna \textit{gezurr-a eta sinestezin-a} iruditzen zait.
    You-E say aux-Comp-art lie-art and incredible-art consider aux
    'I consider what you said a lie and incredible'

    b. Lauaxeta \textit{olerkari-a eta fededun-a} izan zen.
       poet-art and religious-art be aux
       'Lauaxeta was a poet and religious'

Bare predicate nominals with no article, on the other hand, cannot be
coordinated with bare predicate adjectives, an expected result if they belong to
different categories:

(30) a. *Lankideek Jon \textit{urduri eta sailburu} ipini dute
    Colleagues-E uneasy and chairperson put aux
    'His colleagues made Jon uneasy and chairperson'

    b. *Jon Ameriketara joan zen \textit{artzain eta lasai}
       America-to gone aux shepherd and calm
       'Jon went to America as a shepherd and relaxed'

In sum, the possibility of coordinating nominal and adjective predicates only
when headed by the article confirm the proposal that both are headed by the

\textsuperscript{9} Cf. Rothstein 1995 for a clarifying discussion.
same category. Admittedly, the coordination facts alone do not force us to assume that this same category must be D, but in view of the two arguments which I have provided in the preceding subsections the proposal receives further though indirect support.

Given the arguments of relativization, distribution and coordination\(^{10}\), we can conclude that nominal and adjective predicates headed by the article in Basque are true DPs. In other words, the kind of predicates exemplified by data in (3a-b), repeated here for convenience, have roughly the structure in (31):

\[(3) \quad \begin{align*}
a. \text{Atxaga } & \text{idazle-a da eta bere lagunak argazkilari-ak dira.} \\
& \text{‘Atxaga is a writer and his friends are photographers’} \\
b. \text{Atxaga } & \text{jatorr-a da eta bere lagunek ere jatorr-ak ematen dute.} \\
& \text{‘Atxaga is friendly and his friends seem friendly too’}
\end{align*}\]

\[(31) \quad \begin{align*}
a. 
\end{align*}\]
b.

\[
\begin{array}{c}
\text{D''} \\
\rightarrow \text{D'} \\
\rightarrow \text{AP} \\
\rightarrow \text{jatorr} \\
\rightarrow \varepsilon
\end{array}
\]

Once we have established the productive existence of DP predicates in Basque, let us turn to a brief assessment of its relevance.

3. Relevance of DP predicates

The fact that the internal structure of DP predicates in Basque can be either (31a) or (31b) is a reflex of the fact that the article seems to select either NP or AP as its complement:

(32) \(-a/-ak, D [-\text{referential}]: [+NP]; [+AP]\)

But note that (32) alone confirms the correctness of the DP hypothesis put forward by Brame (1982), Fukui & Speas (1986) and Abney (1987) in a somewhat novel and unexpected way: if D can select either NP or AP, it is precisely because the article is a head, and hence may have different (c-)selection frames as one of its expected properties.

Although it is true that Fukui & Speas propose that there is usually a one-to-one correspondence between functional heads and their complement...

(33) "Functional heads always select a unique complement"
(Fukui & Speas 1986)
it turns out from the Basque data that this uniqueness in the complement system of functional categories cannot be universal. The reason why the Basque may select AP is probably related to the morphological fact that the article is a suffix on the rightmost element within an argument DP which can be an adjective in this language (as we saw in (1)); from there on the article may have developed a wider subcategorization feature beyond the expected [+NP]. The matter requires further inquiry beyond the scope of this article.

It is also true that Abney (1987) also has suggested that D may select AP in the case of English prenominal adjectives, which in turn would 'functionally-select' NP complements. According to Abney, this assumption can explain why prenominal adjectives lack true complements, the reason being that the NP acts as the true complement of the adjective:

(34)  
a. the [AP proud [NP man]]
b. *the [AP proud [PP of his son] [NP man]]
c. the [NP [N' man] proud of his son]

However, Abney is forced to assume a different structure for argument DPs with prenominal and postnominal adjectives even though in both cases there must be some nominal element present. In fact, this is precisely the problem in Abney's analysis: even though he claims that D may in principle select AP (when adjectives are prenominal), he cannot account for the fact that the presence of D is necessarily tied to the presence of some NP:

(34)  
d. * [DP the/a [AP proud ]]

Therefore, the Basque data on DP predicates are, to my knowledge, the ones which undisputably show that the category Determiner may select either an NP or AP complement.

To summarize, one could represent the Basque article -a/-ak in the lexicon as follows:

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11 *The proud* is OK if interpreted as a generic DP. But for these cases Longobardi (1994) argues for the existence of a full NP with an empty N head.
(32') **a/ak**, D [+/-referential]: +NP, +AP  

[+referential] \rightarrow [+/-definite] (i.e. definite or existential)  

[-referential] \rightarrow [+/-definite] (i.e. unique-member or not)  

The [+/-definite] value for the predicative value of the article is intended to capture the fact that predicated headed by the article need not denote a unique member:

(35) **Atxaga eta Lete gustatzen zaizkidan idazle-ak dira**  

and like aux writer-art are  

'Atxaga and Lete are writers that I like' or '... are the writers that I like'  

After having discussed the relevance of Basque DP predicates, let us concentrate on what determines the choice between DP predicates and NP/AP predicates.

4. The predicate fight: when DP and when bare NP or bare AP?

Before considering my own proposal for the distribution of DP, NP and AP predicates, I will discuss two previous proposals regarding the appearance of articles on predicates: first I will comment on Stowell’s approach to the distinction between English DP and NP predicates, and second I will present Zabala’s (1993) account of Basque predicates. My own proposal will be based on what I believe is a right intuition in Zabala’s approach but without any of its shortcomings.

4.1. Previous accounts  
4.1.1. Stowell’s (1989, 1991a) semantic approach

In his (1989) and (1991a) papers, Stowell tries to account for the existence of predicates headed by some determiners. As a point of departure, Stowell (1989) hypothesizes that nouns are basically predicative while determiners are basically argumental. This contrast between NPs (= predicates) and DPs (= arguments) works well with many basic cases (e.g. 36), but yields incorrect results with many others, for example in (37) below:
(36)  a. The queen appointed her lover (*the) treasurer of the realm.

(37)  a. Bob called Stan *(a) fool.
    b. This book will make John *(the) most famous person I know.
    (All examples are Stowell's)

Since we seem to inevitably have both NP and DP small clauses or predicates, Stowell, based on work by Carson (1977), claims that "nouns function as predicates denoting the property of INSTANTIATING a kind... in Carlson's sense". Thus, bare plurals, which naturally refer to the entire kind and often have a generic interpretation, can be predicated of plural DPs. In the case of singular predicates, the determiner plays the role of "convert[ing] a predicate denoting INSTANTIATION of a kind into a predicate denoting MEMBERSHIP in the kind". Stowell's further suggestion is that there are natural kinds that consist of only one member and, thus, the property of instantiating an entire kind will be predicated of an individual (for there's only one member in the kind) without the need of using the article. The latter would be the case of all the profession-class nouns in examples like (36a) above and (38c) below: there is only one treasurer of the realm and one president of the class at a given time, hence there is no need for a determiner to denote set-membership. Finally, the determiner is required, even if the predicate has a unique member, when there is no natural kind involved, as is the case in (38d). The relevant examples are given below:

(38)  a. I consider that man a fool (member of kind, "one among fools")
    b. I consider those men fools (all kind instantiated, bare NP)
    c. We elected John president of the class (entire kind = one member)
    d. I consider John the only real friend I have (not a natural kind)
    (All examples from Stowell 1989)

In (38a) the article denotes that the subject of the predicate, "that man", belongs to or is in the set of "fools"; in (38b) the bare plural "fools" (= NP in Stowell's terms) is predicated of "those men" and simply denotes that "those men" instantiate the entire kind of "fools" at a given time (or universe of discourse); in (38c) the article is not needed because president of the class is a set consisting of a single element and therefore it can be directly predicated of an individual; in (38d) the article is
required to denote set-membership since 'only real friend...' does not form a natural class.

In Stowell (1991a) this approach is further refined. The profession-classss nouns is broken down into two types of nouns: the president-class nouns, which would usually represent kinds of a unique member and the doctor-class nouns which may or may not be used as titles in a given language (e.g. German uses them as titles according to Stowell). These two kinds of nouns, paired with the fool-type noun produce a two way distinction among nominal predicates along the following lines: on the one hand the fool-type (singular) nominals require D to form a complex predicate which will denote kind-membership; on the other hand, the doctor and president-class nouns generally denote a title and behave as adjectives. To the extent that the doctor-class nouns are variable with respect to the option of being used as titles, we expect cross-linguistic variation between languages in which these nouns will have a determiner (English) and languages in which they will not (German):

(39)  
a. Jones is a fool
b. Clinton is president of the USA =/> President Clinton
b'. People elected Clinton president
c. Jones is *(a) dentist =/> * Dentist Jones
c'. Hans ist Zahnarzt =/> Zahnarzt Hans\(^{12}\)
(All examples are from Stowell 1991a)

In other words and to summarize Stowell's analysis: the fool-like class always requires D to denote kind-membership; the president-class are quasi-adjectival and don't require D because they denote kinds of a unique member; and the doctor-class has a mixed behavior cross-linguistically.

As correct for the English (or German) data as it might be (but see note 12), Stowell's proposal to explain the different distribution of DP and NP predicates

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\(^{12}\) There are many gaps in Stowell's account: the determiner is actually optional in German with the doctor-class nouns, a fact that remains unexplained. In English, there are cases in which the article is truly optional with president-class nouns, but others in which it is not:

(i) Clinton is (the) president of the USA
(ii) People elected Clinton ("the) president of the USA

Stowell doesn't address this problem at all; (i) and (ii) are predicted to behave alike.
cannot extend to Basque. For one thing, the uniqueness requirement on
president-class nouns doesn't hold for Basque. Compare the following examples:

(40) a. Jendeak Nixon lehendakari(-*a) hautatu zuen.
    people-E president elect aux
    'People elected Nixon president'

    b. Botoemai leek Nixon kongresukide(-*a) hautatu zuten.
       voters-E congressman elect aux
       '(*) The constituents elected Nixon congressman'

In Basque, regardless of the uniqueness of the noun predicate (whether there is
one president but several congressmen), a verb like hauta(tu) "elect" always
requires that its nominal predicate be determinerless\(^\text{13}\): crucially, contrary to
Stowell's account, kongresukide cannot be used as a title.

There are also several Basque data which contradict Stowell's predictions:

(41) a. Jon Ameriketara joan zen artzain (-*a). (= 7a)

    b. Jon eta Ainhoa Donostian daude irakasle (-*a). (= 7b)

In (41a) and (41b), where artzain "shepherd" are irakasle "teacher" are
secondary adjunct predicates with the copula verb egon "be, stay" and the verb
joan "go" respectively, it is hard to conceive of "shepherd" and "teacher" as kinds
of one single member, for there can be any number of shepherds going to
America and of teachers in San Sebastian at any given time, yet the article is
ruled out. And, again, we note that these nouns cannot be used as titles either.

Going in the opposite direction, we also have examples of predicates
denoting a single-membered kind that nonetheless do require the presence of the
determiner:

\(^{13}\) The same generalization will be true of English if (40b) is grammatical; although Stowell gives
a star to (the English version of) (40b), all English speakers I have consulted with consider it
absolutely normal. This lack of contrast between (40a) and (40b) in English would add one more
flaw to Stowell's analysis and make English and Basque predicate nominals more alike.
Interestingly, *lehendakari* CAN be used as title, in which case Stowell’s approach predicts that the determiner will not required (should at least be optional). Given that the predictions of Stowell’s proposal are not fulfilled in Basque, I conclude that the explanation for the contrast between DP and NP/AP predicates is not related to "the ontology of natural kinds" (Stowell 1989: 258) but must lie somewhere else.\(^{15}\)

4.1.2. Zabala’s (1993) Number Phrase

Although I believe the specific implementation of her intuitions are misguided, Zabala’s approach to the line separating DP predicates and bare NP or AP predicates in terms of the individual-level versus stage-level predicate distinction comes close to being explanatory. I will limit myself to a brief summary of her ideas and then point out the problems they raise.

To start with, Zabala makes the assumption that all predicates must be complements to some functional head. She bases her work on Kratzer’s (1989) distinction between stage-level and individual-level predicates; the first correspond to temporary states and transitory activities, whilst the second roughly correspond to permanent states. According to Kratzer, stage-level predicates differ from individual-level predicates in that the former have an abstract spatiotemporal "e" argument in their argument structure that the latter lack:

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\(^{14}\) Example (42a) is ambiguous between denoting a single-membered kind (Jon is the representative) or kind-membership (he is a representative). But once again, the article is obligatory under either interpretation.

\(^{15}\) I have ignored the issue of the presence of determiners in adjectives, about which Stowell’s proposal has obviously little to say. In fact, the alleged adjectival behavior of president-class nouns in Stowell (1991a) intends to suggest that adjectives don’t require determiners, which is exactly what we find in Basque. Remember that AP and NP predicates with articles are both DPs and, consequently, the explanation for the presence of the determiner in predicate adjectives should be the same for predicate nominals.
(43) **Two predicate types** (Kratzer 1989):
   a. stage-level predicates: have "e" argument (*speak English, sit down...*)
   b. individual-level predicates: lack "e" argument (*be poor, know English...*)

This difference can account for contrasts like the following:

(44) a. Ainhoa-k astelehenero euskara ikasten du.
    Ainhoa-E every monday Basque study aux
    'Ainhoa studies Basque every Monday'

b. * Ainhoa-k astelehenero euskara jakiten du.
    Ainhoa-E every monday Basque know aux
    *'Ainhoa knows Basque every Monday'

The temporal quantification implicit in the PP adjunct can bind the variable that corresponds to the hidden "e" argument in the (a) example; no variable of the "e" type is available in the (b) example, and so the sentence is ruled out by the ban on vacuous quantification.

Zabala adopts Kratzer's division of predicate types and assumes a three-way distinction among adjectives: (a) stage-level adjectives must project an AspP for the "e" argument to be realized syntactically; (b) individual-level adjectives, on the other hand, cannot project an AspP because they lack the "e" argument and thus project a Number Phrase (which basically corresponds to AP predicates with articles); (c) a third kind of adjectives may or may not choose to realize the "e" argument: if they do, an AspP will be projected and no number effect will obtain.

(45) **Zabala's (1993) proposal**
   a. Individual-level predicates
      \[ \Rightarrow \text{NumP} \ (\text{Num} = \text{-a/-ak}) \]
   b. Stage-level predicates
      \[ \Rightarrow \text{AspP} \ (\text{Asp} = 0, \text{zero}) \]

The three possibilities for adjective predicates are given in the examples:

(46) a. Ainhoa [AspP t\_i [AP t\_i haurdun]] dago
    pregnant is
    'Ainhoa is pregnant'

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*16 See also Diesing (1992: chapter 2) on this distinction.*
b. Atxagaí [NumP ti [AP ti jatorr]-a] da
   friendly -art is
   'Axaga is friendly'

c. Ainhoai [AspP ti [AP ti lasai]] dago
   calm is
   'Ainhoa is calm' (at this point)

d. Ainhoai [NumP ti [AP ti lasai]-a] da
   calm -art
   'Ainhoa is relaxed' (as a general feature)

Predicates that are complements to non-copular verbs are analyzed in a similar fashion: the relevant verbs select individual-level small clause predicates which surface as NumP complements whose head is -a/-ak; the remaining verbs select stage-level predicates which project an AspP small clause (the head of which is 0).17

As for predicate nominals, Zabala draws a somewhat different distinction between predicates with article and without. Nouns that occur as main predicates are analyzed as individual-level predicates and, thus, project a Number Phrase small clause:

\[(47) \quad \text{Atxaga} [\text{NumP ti} [\text{NP ti idazle}]-a] \text{ da} \]
\[\quad \text{writer-art} \]
\[\quad '\text{Atxaga is a writer}' \]

Other cases of selected predicate nominals headed by the article are analyzed in the same way. Nominal predicates that appear articleless, on the other hand, are not regarded by Zabala as stage-level predicates; rather she assumes that they form complex predicates incorporating to the main verb, apparently in the lexicon. As argued in Artiagoitia (1997), the analysis of bare predicate nominals along these lines is problematic, if not empirically incorrect.18

To summarize, Zabala adopts Kratzer’s stage-level/individual level predicate distinction and the corresponding [+e]/[-e] correlate. Given that in her view predicates must always be complements to a functional category, stage-

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17 Zabala assumes that secondary predicate adjectives must always be stage-level predicates with the hidden "e" argument; hence, they project AspP.
18 Some predicate nominals are adjuncts (cf. (7)), which in principle don't incorporate. Besides, these predicate nominals behave as syntactically independent from the verb in A'-movement structures (wh-, focus-movement, ...); if incorporation exists at all, it is at LF (cf. Stowell 1991b).
level predicates end up as complements to Asp, which realizes the [+e] argument; individual-level predicates, on the other hand, end up as complements to a Num head realized as -a/-ak. In what follows, I point out what I think are problematic and unsatisfactory points in Zabala’s account.

The first problem is that there is no justification for ascribing the morphemes -a/-ak to the category Number in addition to category D. In a sense, Zabala’s proposal represents a revised version of the number inflection hypothesis and the arguments given in section 3 are strong enough against that hypothesis: in her account there is no way of explaining why predicates headed by the article allow relativization (unless we make the unprecedented assumption that relative clauses are licensed by the category NUM as well as by D). Furthermore, if one assumes that predicates with articles are NumP the fact that they share to some extent the same distribution as referential DPs (e.g. as complements to izan "be" and "copular" ukan "have", to epistemic verbs like iruditu, iritzi "consider") appears purely coincidental. If, as I have argued, all predicates with articles are DPs, the similar distribution they share with referential DPs is in fact (correctly) predicted.

A second major shortcoming of Zabala’s specific proposal is that it simply stipulates the connection between individual-stage predicates and the projection of a Number Phrase. There is no a priori reason why individual-stage predicates should project a Number Phrase and, not say, a DP or a PP. What is more: as things stand in Zabala’s account, it seems as though the categories Asp and Num should be mutually exclusive universally19 yet we have evidence that languages that distinguish between stage-level predicates and individual-level predicates such as Spanish do display number-agreement on both types of predicates:

(48) Mis amigo(s) [es/ son] muy activa(s) pero hoy está(n) muy cansada(s).
    'My friends are very active but they are very tired today'

In other words, it doesn’t follow that the presence of the category Asp entails the absence of the category Num. The only conceivable way to preserve Zabala’s analysis would be to hold that categories Num and Asp are after all not mutually exclusive and still maintain that individual-level predicates are realized as NumPs and stage-level predicates as AspPs; one could then claim that the

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19 In principle, the individual-level = NumP and stage-level = Asp correspondence is supposed to hold universally in her analysis.
category Asp in Basque directly selects NP or AP without the mediation of an NumP while maintaining that Spanish Asp selects NumP which in turn selects NP or AP. But, as far as I can see, this amounts to a mere reformulation of the initial problem: some Basque predicate nominals and adjectives (= individual-level predicates) seem to "display number-agreement" (a strange claim in a language which in principle lacks number inflection on nouns and adjectives), but others (= stage-level predicates) don't. In other words: this approach would give a different name to what we "see" (articles on some predicates, no article on other predicates), but it would not explain why we see it\(^\text{20}\).

After pointing out the problems raised by Zabala's specific analysis, I now turn to my own proposal regarding the choice between DP and AP/NP predicates.

4.2. Individual and Stage-level predicates (Kratzer 1989)

Despite what I have just said in section 4.1.2, **Zabala's main insight** regarding the separating line between the two types of predicates is absolutely right: predicates with articles are indeed interpreted as individual-level predicates, and bare predicates as stage-level predicates. Although she doesn't provide any test, it is particularly easy to draw the distinction by looking the behavior of predicates with the copulas *izan*: 'be' and *egon* 'stay, be'. DP predicates with *izan* reproduce in all respects the diagnostics for individual-level predicates given by Kratzer and Diesing; they allow a generic reading but disallow an existential reading, and are incompatible with temporal modifiers like *right now*:

\[ (49) \text{a. Grekoak lasai-ak dira.} \]
\[ \text{greek-art calm-art are} \]
\[ \text{a'. In general, greeks are relaxed (= generic reading)} \]
\[ \text{a'}. * \text{There are some Greeks that relaxed} \]
\[ \text{b. } * \text{... oraintxe bertan ('right now')}. \]

\(^{20}\) Alternatively to argue that Num is a strong feature with individual-level predicates but a weak feature with stage-level predicates is not very telling either since we know that the strength of number inflection is uniform for a given category across the language (cf. 22 supra in the text).
Bare, articleless predicates, on the other hand, allow both a generic and existential reading, and are compatible with a present moment reading:

(50)  
a. Baserriak salgai (*-ak) daude.  
    farmhouse-art salesproduct stay  
    'Farmhouses are on sale' (lit: 'Farmhouses are sale-product')  

   a'. In general, farmhouses are on sale.  
   a". There are some farmhouses on sale  
   b. ... oraintxe bertan ('right now').

These simple tests with copula verbs show that, all things being equal, DP predicates are truly interpreted as individual-level predicates and bare (in this case) NP predicates are truly interpreted as stage-level predicates. This statement squares well with Zabala’s basic insight (the presence of the article = individual-level predicate) yet we have rejected her notion that predicates headed by the article are NumPs because we have shown that they are true DPs. How can we reconcile these two generalizations, the fact that we have DP predicates and the fact that they are generally interpreted as individual-level predicates?

4.3. DP-predicates as a matter of c-selection

One way to account for this connection between DP predicates and individual-level predicates is to assume that semantic-selection governs the choice, and that once a verb selects an individual-level predicate the latter will automatically be realized as a DP. The (crosslinguistic) problem with that kind of approach lies in the fact individual-level predicates are not universally realized as DPs21; they are so realized in Basque. Many predicate adjectives headed by the article in Basque (hence DPs by hypothesis) correspond to simple APs in, say, English, even though the latter can also be interpreted as individual-level predicates:

(51)  
a. Axaga jorr-x da (underlined constituent = DP)  
b. Axaga is friendly (underlined constituent = AP)

---

21 Although I believe that the opposite may be true: DP predicates receive an individual-level interpretation universally.
Rather than pursuing an s-select approach, in this section I would like to propose that Basque DP predicates are c-selected as such; in other words, I suggest that there is indeed a [+DP] (D = [-referential]) subcategorization feature along with the features [+NP] and [+AP]. If we assume that there is some agreement projection above the predicate categories as proposed in Chomsky (1993), there will be in principle three kind of predicates in Basque, namely: NP predicates, AP predicates and DP predicates. The latter kind may naturally "hide" a predicate nominal or a predicate adjective, due to the fact that the article -al-ak (the only member of the category D compatible with the feature [-referential]) may select [+AP] or [+NP] (cf. 32 supra):

(52)  a. Different Vs select +DP, +NP or +AP predicates
b. 

```
      Agr ''
     /     \\
Spec    Agr '
    /     \\
 X ''   Agr(x)
   /     \\
 D ''   X'
  / \\  /
 Jon X
```

predicate X = N, A,

After Chomsky (1993)

Here are some prototypical examples:

(53)  a. [spec Agr [ [NP Jon [N irakasle]] AgrN ]]  
       teacher
       = Jon irakasle

b. [spec Agr [ [AP Jon [A lasai]] AgrA ]]  
       calm
       = Jon lasai

c. [spec, Agr [ [DP Jon [D' [AP lasai] -a]] AgrD ]]  
       calm
       = Jon lasai-a

c'. [spec, Agr [ [DP Jon [D' [NP irakasle] -a]] AgrD ]]  
       teacher
       = Jon irakasle-a
Crucially, once we get a Determiner Phrase in Basque, D must be overt; this so far unexplained fact was already pointed out in (1-2) at the beginning of the article. The same holds of DP predicates; once a DP predicate is selected, an overt determiner is needed. The side-effect of this DP selection is that we get the impression of "number" agreement because only determiners (and hence -a/-ak too) inflect for number in Basque (the issue doesn't arise with bare APs or NPs because neither inflects for number). Put it clearly: when we get the article on a predicate, a DP is selected; when we don't, AP or NP are selected. The difference between DP ("article") predicates and NP or AP predicates ("no article") reduces then to a different category selection, not to a different agreement selection.

Having clarified this basic matter, let us see how the [+DP] and [+AP]/[+NP] c-selection features work in the case of copulas. For most part, it seems that the verb izard 'be' selects [+DP] (small-clause) complements whereas egon 'be' appears to select both [+AP] and [+NP]:

(54)  
a. izard 'be', A: +DP (D = [-referential])
b. egon 'be', A: +NP, +AP, (+PP, +CP...)

The explanation for the the data below follow straightforwardly from (54):

(55)  
a. Jon lasai*(-a) da / Jon irakasle*(-a) da
   'Jon is calm' (in general)  'Jon is a teacher'
b. Jon lasai*(-a) dago / Jon irakasle*(-a) dago.
   'Jon is calm' (now)  'Jon is (acting) as a teacher'

The c-selection features of (52) should be complemented at LF with some interpretive principle along the following lines:

(56)  
a. Interpret DP predicates as individual-level predicates

---

22 The explanation for this obligatoriness of an overt D is to be sought in morphological terms: if Longobardi (1994) is right in claiming that some properties of arguments such as grammatical number "lie precisely in the D position" (1994: 620), it becomes clear that Basque DPs require some D in order to carry that information because neither nouns nor adjectives inflect for number. In this respect, DP predicates are behaving as arguments.
b. Interpret NP and AP predicates as stage-level predicates

Let us now go back to some of the paradigms studied in section 1 of this article and check whether we can maintain a similar analysis based on c-selection and subsequent interpretive conditions. In principle, the other verbs which require predicates headed by the article subcategorize for a DP small-clause (where D is non-referential) with the possibility that the article may select either predicate nominals or predicate adjectives:

(57)  
| a. Ainhoak aktore-a \(\text{ematen du, dirudi}\). \(= 9\) |
| 'Ainhoa seems an actress' |
| b. Ainhoak jatorr-a \(\text{ematen du, dirudi}\) \(= 17\) |
| 'Ainhoa seems friendly' |

(58)  
| a. Atzetik begiratuta gizon-a iritzi diot. \(= 10b\) |
| 'Looking from behind, I thought her/him a man' |
| b. Ainhoa eta Jon azkarr-ak iruditzen zait. \(= 18a\) |
| 'I consider Ainhoa and Jon intelligent' |

Not surprisingly, all these predicates are interpreted as individual-level predicates: Ainhoa’s actorhood in (57a) is perceived as a permanent feature of hers, and so is her friendliness in (57b). When somebody says (58a), she or he must have assumed that the person considered was a man in a permanent way; similar considerations apply for (58b). Therefore, it appears that once a [+DP] predicate is selected, it gets interpreted as an individual-level predicate.

How about bare APs and bare NPs? In principle, when they are complements, I propose that they are selected as such by the features [+NP] and [+AP], which do not necessarily coincide for the same verb, as argued in section 1.2. Once again not surprisingly, it seems that both bare APs and NPs do indeed get interpreted as stage-level predicates:

\[23\] In the dialects described by Lafitte (1944), the copula \(\text{izan} \ 'be' \) is used in contexts where other dialects use \(\text{egon} \ 'stay, \ be' \) so \(\text{izan} \ 's \ c\text{-selection features are [+DP], [+AP] or [+NP]. However, the interpretive difference still holds:}

\[i\]  
\begin{align*}
\text{Eri da} & \quad \text{Eri-a da} \\
\text{sick is} & \quad \text{sick is} \\
\text{'c'est un malade'} & \quad \text{'Il est malade'}
\end{align*}

Lafitte (1944: 125)
(59)  a. Jon **larri** (*-a) sentitzen da.  
'Jon feels sick'

b. Zurrumurru horiek Jon eta Ainhoa **urduri**(*-a) ipini dituzte. (= 13a)  
'Those rumours have left Jon and Ainhoa nervous'

c. Ainhoa **irakasle** nahi dugu.  
'We want Ainhoa (as our) teacher'

d. Lankideek Jon **sailburu** aukeratu dute. (= 14c)  
'His colleagues have elected Jon chairperson'

In (59a) Jon’s sickness is not a permanent feature of his (he could indeed be a very healthy person); in (59b) Jon and Ainhoa’s uneasiness is again a very transitory characteristic of theirs, at least from what we can infer from the sentence. The interpretation of bare NPs in (59c-d) may be harder to grasp but it is crystal-clear for Basque speakers: (59c) is felicitous even if Ainhoa is not a teacher by profession, just somebody that can perform as a teacher temporarily; and in (59d) his colleagues elect Jon so that he can act as chairperson. It might well be that Jon is not really the chairperson (because he rejects the election or because he is just replacing the actual chairperson); in a sense, the colleagues elect a stage where Jon is temporarily acting as a chairperson.

The state of affairs described in this section also allows for the existence of verbs which may subcategorize for DP predicates on a par with [+AP] or [+NP] predicates, with the subsequent difference in interpretation. There are such cases: one is the verb *izan* 'be' itself in the dialects described by Lafitte (see note 23); another case is the verb *eman* 'seem' (literally 'give'), which may also select AP along with DP (the latter possibility already noted in (9) and (17)):

(60)  a. (Zuk) **dotore (±-a)** ematen duzu jaka horrekin.  
'you-E elegant give aux jacket that-with 
'You look elegant with that jacket on'
The predicate adjective *dotore* 'elegant' is felicitous in (60a) where it denotes a transitory property of the hearer, that of looking elegant wearing a certain jacket; obviously, this doesn't entail that the person is an elegant person in any general way and therefore the article is incompatible with the PP modifier. (60b), on the other hand, suggests that the (apparent) elegance is a permanent characteristic.

But above all, I would like to emphasize once again that we never find in Basque a case of [+DP] predicate selection where only predicate nominals or only predicate adjectives are complements to the article; once a DP is selected either predicate nominals or adjectives may surface as complements to *-a/-ak*.

Finally, we are now in a position to explain the generalization we summarized in (20c), repeated here for convenience:

(20) c. Adjunct predicates are always articleless Ns or As.

If, as I have argued in this section, DP predicates result from c-selection, then it follows that DP adjunct predicates should not exist. Consequently, we predict then that only bare NPs and bare APs (leaving PPs aside) should be possible as adjuncts, a prediction which is correct for Basque:

(61) a. Jon Ameriketara joan zen *artzain(-*a) (= 7a)
    'Jon went to America as a shepherd'

b. Jon mendira joan da *tasai(-*a)
    (= 15a)
    'Jon went hiking relaxed'

It doesn't come as surprise to note that, once again, these articleless NP and AP respectively are interpreted as stage-level predicates: Jon need not be an actual shepherd (he might be a sailor by profession but pretend to be -or act as- a shepherd at the time of going to America) in (61a); and Jon was simply calm at the time of going hiking in (61b) (even though he may be an absolute nervous person in general). Once again, the syntactic distribution of predicate types is
determined by subcategorization features and, I claim, the interpretation follows from the syntax and not conversely\textsuperscript{27}.

5. Final remarks: conclusions, conjectures, and problems

In this article, I have studied the distribution of the Basque article on predicates and reached the following conclusions:

(a) Predicates headed by the article are plain Determiner Phrases, hence we have a case of generalized DP predicates in Basque;
(b) The existence of Basque DP predicates confirm the DP hypothesis in a new way: the article-\textit{a/-ak} may select either an NP or an AP complement, a feature which is an undisputable property of heads\textsuperscript{28};
(c) The proposal that the distribution of DP predicates is a property of each verb correctly predicts that "articled" As and Ns should have same distribution (because of the selection properties of the article) and that DP predicates should never be adjuncts\textsuperscript{29}, a correct prediction for Basque;
(d) Contrary to what is claimed in the literature (cf. Rapoport 1993), bare NPs can be adjunct predicates (and usually have stage-level interpretation);
(e) The necessity of c-selection seems inescapable in that features such as [+DP] and [+AP]/[+NP] are needed crosslinguistically to account for the distribution of predicates\textsuperscript{30}.

\textsuperscript{27} The verbs of change mentioned in example (19) do not pose a threat to my proposal; they are simply a case where a verb selects indistinguively [+DP], [+NP] or [+AP] predicates, with the NP and AP predicates receiving an individual-level interpretation as a marked option. The exception to the otherwise regular interpretive principles can be attributed to the fact that selection of bare NP and AP predicates by these verbs of change represents a residual phenomenon, outside the scope of core grammar. After all, the overwhelming tendency in spoken Basque is to use the feature [+DP] with these verbs of change.

\textsuperscript{28} In argument DPs with "nominalized" Adjectives, I have argued in Artiagoitia 1997 that Basque D selects AP without the need of positing an empty N.

\textsuperscript{29} However the same is not true of English:

(i) I arrived a poor man (Emonds 1985: 36)
(ii) I went to church a sinner and came out a better person

\textsuperscript{30} Relying solely on s-selection leads one to expect that verbs which select individual-level predicates in English would invariably yield both DPs and APs. This prediction doesn't obtain for the speakers I have consulted:

(i) I consider Jon [intelligent / a genius] (ii) John seems [intelligent / ? a genius]
The five conclusions seem robust and well-founded in my opinion; nonetheless, the tasks ahead and the questions which remain to be worked out are not small. More specifically I would include the following:

(62)  a. Are Basque DP predicates really that different?
      b. What kind of variation can we expect for predicate types
crosslinguistically?
      c. Why do DP predicates get interpreted as individual-level predicates?
      (i.e. what is D doing to the predicate?)

The first two are tightly connected with each other and all I have to offer is my conjecture that Basque is probably not all that different. In particular, once we abstract away from the language-particular fact that the Basque article may indeed select AP or NP, it seems that the DP/NP distinction plays some role also in English (and may even correlate with the individual/stage-level distinction):

(63)  a. I consider Smith and Anderson representatives who know well their
      job (= DP contra Stowell 1989)
     b. I consider Smith a fool who has no idea of what's going on (= DP)

(64)  a. * Voters elected Smith and Anderson representatives who would tackle
      the real issues (= NP)
     b. * The Queen appointed Smith treasurer of the realm who would keep
      track of the revenues (= NP)

The predicate nominals in (63) allow relative clauses, which suggests they are DPs (even though D is not overt in (63a)); the opposite is true in (64), where we find bare NPs. The feature [+AP] will also play a role in languages like English, but perhaps not necessarily tied to any specific interpretation:

(iii)  I believed John [intelligent / ? a genius]  (iv)  I find John [intelligent / ?? a genius]
(iv)  John makes[* intelligent / a good husband]  (v)  Jon resembles [* intelligent / a genius]

Hence, selection of semantic types (individual, stage-level) alone doesn't give us the right distribution of predicates; features such as [+DP], [+NP] and [+AP] seem more adequate.
(65) a. John is [intelligent, tired]
b. John seems [intelligent, tired]

More research is needed but a priori we would expect that languages will vary as
to how the features [+DP], [+NP], [+AP] are selected by the different verbs in
every language and how they are instantiated morphologically.31

As for the question of why DP predicates are interpreted as individual-
level predicates in Basque (and perhaps universally), I have very little to say: it
seems as though both nouns and adjectives may in principle have a spatio-
temporal "e" argument which the determiner appears to saturate, in the sense of
Higginbotham (1985). In other words, the determiner seems to convert a
potential predicate of a certain type into a predicate of a rather different type
which lacks the "e" argument. But this is a conjecture that awaits further research.

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31 English uses as^DP (as = P, cf. Emond 1985) structures in contexts where bare NPs are used in
Basque; Spanish resorts to either de^NP or como^NP. All of them are nonetheless interpreted as
stage-level predicates as far I can tell yet the categorial realization is NP or PP.
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Aspiration and Resyllabification in Argentinian Spanish

Ellen M. Kaisse

Throughout the Spanish speaking world, many dialects realize underlying /s/ as [h] in certain positions. Usually, the best description is that this aspiration takes place in the coda of a syllable. Yet there are significant differences among dialects as to which instances of /s/ end up aspirating, and these have to do with the interaction of the phonology with morphology, as well as with slight differences in the phonological statement of the rule. In this paper, I catalogue the behavior of /s/ in five different dialects, concentrating on new data I have collected from two dialects of Argentinian Spanish. I argue that the major difference among them is in the strata at which aspiration and resyllabification apply. Much of what I discuss is ground already intriguingly well-trodden, for it turns out that the parameters by which aspiration/resyllabification interactions may vary are sufficiently restricted that virtually the same analyses I have developed independently for Argentinian appear in the literature in full or sketchy form in analyses of unrelated dialects spoken in the Caribbean and Spain. The contribution of this paper then is (1) a description of a dialect of Argentinian, that of the province of Rio Negro (RNA), whose aspiration behavior has not been previously documented to my knowledge, comparing the grammar of RNA with the best-known Caribbean dialects (C1), which are described as a benchmark in section 1; (2) the recognition that the distribution of aspiration in RNA is virtually the same as that of another group of Caribbean dialects (C2) spoken several thousand miles to the north; (3) an explicit comparison between the grammar that describes the Rio Negro facts and the grammar of the standard dialects of Buenos Aires; (4) the recognition that Buenos Aires has the same relationship between and stratal assignments of grammar of aspiration and resyllabification as Chinato (Ch), an unusual dialect of European Spanish; and finally, (5) a theoretical claim concerning the universal position of resyllabification processes in grammars.

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1See Kaisse (1996) for a formalization of aspiration as 'debuccalization' - that is, as a rule which delinks the oral cavity specification for place, leaving a placeless continuant.
Caribbean Spanish I

This group of dialects represents the most familiar case of aspiration in the generative literature, as it has been treated in Harris (1983, 1993), Guitart (1979), and works referred to therein. Its distribution of aspirated /s/ is reported for some Honduran speakers (J. Guitart, p.c. 1997), for example, and is also described for some Andalusian dialects of Spain (Hualde 1989, 1990). Caribbean I is the most profligate in its aspiration\(^2\) -- any /s/ that is in a coda at any stage of the derivation is realized as [h], even if later processes then move this [h] out of a coda and place it in syllable-initial position. In this dialect, /s/ is aspirated in the following contexts:

Morpheme-internally before a consonant:
- \(\text{di[h]co}, \text{ra[h]go}, \text{pa[h]ho}, \text{mi[h]mo}, \text{buta[h]i}, \text{vi[s]jo}\)
  - 'disk' 'feature' 'grass' 'same' 'thus' 'vice'

Stem-finally before a consonant:\(^3\)
- \(\text{di[e][h]+mo}, \text{di[e][h]+mar}\) but \(\text{di[e][s]+e[s]}, \text{e[s]+o}, \text{ca[s]+a}\)
  - 'tithe' 'decimate' 'tens' 'that' 'house'

Word-finally, regardless of the following context:
- \(\text{lo[h] bicho[h]}, \text{lo[h] animale[h]}, \text{damelo[h]}\)
  - 'the creatures' 'the animals' 'give-me-them'

Prefix-finally, regardless of the following context:
- \(\text{de[h]+cremada}, \text{de[h]+echo}, \text{de[h]+e[h]perar}, \text{de[h]+hielo}\)\(^4\)
  - 'de-fatted' 'waste' 'despair' 'I thaw'

Harris (1983, 1993) has shown that all of these contexts are correctly covered by the generalization that /s/ aspirates in a coda. Crucially, however, syllabification and resyllabification must apply cyclically, with aspiration ordered between them, in order for this to work out. Aspiration works on a consonant as soon as it enters a coda in these dialects, and is not bled by resyllabification moving it out of the coda and into the onset of a previously onsetless syllable. Also, there must some method for insuring differential behavior for prefix-final /s/ before a vowel initial stem (\(\text{de[h]+echo}\)) vs. stem-final

---

\(^2\) Instances of /s/ aspirating even in canonical onsets are reported and are the subject of many jokes which I will spare the reader. Hualde (1989, 1991), citing Chacón Berruga (1981), Moya Corral (1979), and Espinosa (1930) reports onset-aspiration in some parts of southern Spain, New Mexico, and Colombia.

\(^3\) It is not easy to find such cases, as most suffixes begin with vowels. Thanks to James Harris for these examples. Since they are both rare and do not act differently from morpheme-internal cases, I omit them from further discussion.

\(^4\) The behavior of this last stem, which is representative of the product of diphthongization, is treated at length in Harris and Kaisse (1997), which details the interaction of aspiration with rules distributing consonantal and non-consonantal variants of palatal segments.
/s/ before a vowel-initial suffix (ca[s]+a, die[s]+es). Harris (1993) achieves this result by delaying rhyme-formation until after the cycle on the root, so that the /s/ of a prefix always syllabifies with that prefix, not being able to enter the already-formed and thus inviolable onsetless syllable of the root. Booij and Rubach (1984) achieve a similar result for Polish by treating prefixes, but not suffixes, as separate prosodic words with their own cycles.

The following derivation summarizes the analysis thus far:

<table>
<thead>
<tr>
<th>disco</th>
<th>dies+es</th>
<th>des[cargar]</th>
<th>des[i]gual</th>
<th>dos][ alas</th>
<th>dos][ palas</th>
<th>underlying</th>
</tr>
</thead>
<tbody>
<tr>
<td>dis.co</td>
<td>die.ses</td>
<td>car.gar</td>
<td>i.gual</td>
<td></td>
<td></td>
<td>inner word syllab.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>dos.a.las</td>
<td>dos.p.a.las</td>
<td>outer word syllab.</td>
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<td>dih.co</td>
<td></td>
<td>deh.car.gar</td>
<td>deh.i.gual</td>
<td>doh.a.lah</td>
<td>doh.p.a.lah</td>
<td>aspiration in coda</td>
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<tr>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>de.hi.gual</td>
<td>do.ha.lah</td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>phrasal aspiration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>dihco</th>
<th>diese</th>
<th>deh[cargar]</th>
<th>deh[i]gual</th>
<th>doh[ala]h</th>
<th>doh[pa]lah</th>
</tr>
</thead>
</table>

'disk' 'tens' 'discharge' 'unequal' 'two wings' 'two shovels' 

Notice that it is crucial that the first pass of aspiration precede the phrasal resyllabification that moves a word-final coda consonant into an onset. 5 Harris (1993) achieves this result by extrinsically ordering aspiration, a phrasal rule in that analysis, before the equally phrasal rule of resyllabification. Notice, however, that this extrinsic order is not the only way of skinning the cat. It is well established that rules of syllabification (e.g., rules that take unparsed segments and place them into syllables) are the first to apply on every cycle of the phonology. I suggest here that we extend this generalization to rules of resyllabification, that is to rules which move a segment to a more optimal syllabic position when new material becomes available:

**Syllabification First:** Syllabification processes, including resyllabification, precede all other processes on a given stratum. 6

---

5 Resyllabification has been handled in several ways in the literature, including marking word-final consonants as extrametrical and subsequently erasing that extrametricality where they are no longer peripheral. I do not adopt this method here as it does not easily allow for the interdialectal variation we see in Spanish, where some dialects subject word- or morpheme-final consonants to processes applying in codas while others do not.

6 The Catalan facts in the second half of Harris (1993) appear to counter-exemplify the notion that resyllabification must precede all segmental rules at a given stratum. However, there are at least two possible reanalyses of these data which eliminate the need to apply the postlexical incarnation of resyllabification after other postlexical rules. One, suggested to me by Jim Harris, readjusts the attachment of the syntactic clitic 'ho' so that the phonology can treat it as a word-level suffix.
Syllabification First is a good move to make on a few counts. Firstly, it removes the possibility of parochial orderings from individual grammars. Second, it unifies previously made observations about the continuous nature of syllabification with the closely related observation that many languages avoid onsetless syllables via reassignment of coda consonants. Notice, however, that I do not claim that every language will have resyllabification at every stratum. Indeed, we will see that some dialects of Spanish resyllabify within words (at the word level) while others only do so postlexically, after words are strung together into phrases.

A corollary to our syllabification principle is that if aspiration applies before resyllabification in a given derivation, aspiration has applied in an earlier stratum than resyllabification. We shall see that this corollary yields correct results in all the dialects we will investigate.

A revised version of the derivations above, then, will label aspiration as word level:

<table>
<thead>
<tr>
<th>Cycle I</th>
<th>inner word syllabification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle II</td>
<td>outer word syllabification</td>
</tr>
<tr>
<td>Cycle II</td>
<td>outer word aspiration in coda</td>
</tr>
<tr>
<td>Postlexical module</td>
<td>phrasal resyllabification</td>
</tr>
<tr>
<td></td>
<td>(phrasal aspiration)</td>
</tr>
</tbody>
</table>

The dialects we refer to as Caribbean I, then have the following critical properties:

Caribbean I: Lexical (word level) aspiration 7
No word-level resyllabification
Phrasal resyllabification

Another possibility is to stipulate by brute force that Catalan prefixes are prosodic words. Then resyllabification sandwiches a devoicing rule, much as in the RNA derivation in section 2 of this paper.

7 The theory of lexical phonology requires that the cyclic rules of the first stratum be structure-preserving, that is that they only produce outputs that are phonemes of the language. Word-level and postlexical rules are capable of producing either allophones or phonemes; in other words, they need not be structure preserving. It would be ideal if the position of aspiration in the various dialects of Spanish were predictable on this basis, that is if those languages with an /h/ were able to order aspiration earlier than those which realize orthographic <j> as [x] rather than [h]. However, there is no such correlation. At least some Caribbean has h, Argentinian has x, and all differ in their placement of Aspiration independently of the realizations of this phoneme.
This conjunction of traits makes it impossible to tell if aspiration also applies postlexically in these dialects, since there will be no inputs to it left. All /s/’s that have ever been in a coda have already aspirated and no postlexical rule forms new codas. Whether or not one posits a vacuous application of phrasal application really depends on what version of the Strong Domain Hypothesis one subscribes to, if any. If one believes with Kiparsky that rules apply as early as possible and continue until explicitly turned off, there is no harm in allowing phrasal aspiration. If one believes with Halle and Mohanan that rules apply as late as possible and extend their domain ‘upwards’ into the lexical phonology unless turned off, one will also opt in this case for phrasal resyllabification. However, if one suspects, as I do, that we really know too little to believe in any version of a Strong Domain Hypothesis, one will note that there is no evidence for phrasal resyllabification and therefore it will have no vacuous reapplication.

Notice that aspiration is a word level rule in these dialects. The theory of Lexical Phonology holds that rules begin as postlexical sound changes and gradually lexicalize, moving up in the grammar into the lexical component. On this model, these most profligate s-aspiring dialects are also the most innovative, having spread aspiration to contexts (prevocalic in prefixes as well as in words) where it would not have originally applied as a postlexical rule.

2 Rio Negro Argentinian and Caribbean II

Working our way down the scale from more ‘profligate’ aspirating varieties to ones which target /s/ in fewer environments, we turn now to the Argentinian dialect of Rio Negro Province, which lies to the south and southwest of Buenos Aires. While Caribbean, especially what I have dubbed above ‘Caribbean I’, is well-described in the literature, I am unaware of any works which treat the phonology of Rio Negro (RN). RN differs from Caribbean I only in that s is not aspirated before a stem-initial vowel -- forms like desigual are pronounced [de.si.gual]. Evidently, there is a word-internal resyllabification process which removes the s from its coda before aspiration can get to it. On the other hand, word final s is aspirated in this dialect regardless of whether the following word begins with a vowel or a consonant. This dialect thus requires a ‘sandwich’ application: resyllabification-aspiration-resyllabification. According to our syllabification-first principle, the stratal assignments must be outer word: resyllabification, aspiration; phrase level: resyllabification. It is again impossible to tell if there is also a phrase-level application of aspiration, since all instances of

---

8 I am grateful to Pascual Masullo, who originally pointed out to me that the natives of the province in which he teaches do no aspirate in the same environments as speakers from Buenos Aires. Bell (1996), reporting on research done at the Universidad de Córdoba, confirms that natives of the city of Córdoba, like those from Rio Negro and Neuquen, also aspirate word-final /s/ before a vowel. (Córdoba lies about 800 miles north of Rio Negro.) I suspect that the Rio Negro dialect is representative of the whole region of Patagonia, which forms the southern third of Argentina. However, I have only conducted research in Rio Negro and the adjacent portion of Neuquen province.
s in coda have been either aspirated or resyllabified already. The following derivation shows how the 'sandwich' order results in correct outputs.

<table>
<thead>
<tr>
<th>disco</th>
<th>dies-es</th>
<th>des[cargar]</th>
<th>des[igual]</th>
<th>dos][ alas</th>
<th>dos][ palas</th>
<th>underlying</th>
</tr>
</thead>
<tbody>
<tr>
<td>dis.co</td>
<td>die.ses</td>
<td>car.gar</td>
<td>i.gual</td>
<td></td>
<td></td>
<td>inner word</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>syllab.</td>
</tr>
<tr>
<td>—</td>
<td>—</td>
<td>des.car.gar</td>
<td>des.igual</td>
<td>dos. alas</td>
<td>dos. pa.las</td>
<td>outer word</td>
</tr>
<tr>
<td>—</td>
<td>—</td>
<td></td>
<td>des.i.gual</td>
<td></td>
<td></td>
<td>syllab.</td>
</tr>
<tr>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
<td>doh.a.lah</td>
<td>doh.pa.lah</td>
<td>outer word</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>aspiration</td>
</tr>
<tr>
<td>dih.co</td>
<td>—</td>
<td>deh.car.gar</td>
<td></td>
<td>doh.a.lah</td>
<td>doh.pa.lah</td>
<td>outer word</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>aspiration</td>
</tr>
<tr>
<td>—</td>
<td>—</td>
<td></td>
<td>do.ha.lah</td>
<td></td>
<td></td>
<td>phrasal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>resyllabification</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(vacuous)</td>
<td></td>
<td></td>
<td>phrasal</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>aspiration</td>
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</tbody>
</table>

The only complication is that Rio Negro appears to be influenced by the standard Buenos Aires dialect, so that an occasional word-final [s] is heard, in accord with, as we shall see, a regular feature of BAA. Speakers from Buenos Aires stigmatize all variation from their own pattern of aspiration, and refer to the Rio Negro dialects as [looxoh], a jocular reference to the way Patagonian speakers pronounce the phrase los ojos ‘the eyes’.

It turns out that this distribution of /s/ is not unattested elsewhere in the Spanish-speaking world. Many dialects of Caribbean Spanish, or Caribbean II (C2), as I will dub it, have the same pattern of aspiration. C2, particularly the prefixal behavior that differentiates it from C1, is not as well known to the general linguistic community, as it is not explicitly treated in Harris (1983 or 1993), but it seems to be a common pattern, attested, for example, in Cuba. Like Rio Negro, it differs from Caribbean I only in that /s/ is not aspirated before a stem-initial vowel. Unlike RNA, C1 and C2 aspiration are highly variable, within words, where it is virtually categorical in RNA.

To summarize, our analysis of RNA and C2 has the following critical properties:

RNA, C2:  Word-level resyllabification
          Word-level aspiration
          Phrasal resyllabification

---

9Thanks to Jim Harris for suggesting this explanation of the variation I found in the realization of /s/ before pause in Rio Negro.
Note that the reapplication of resyllabification, which yields the different behavior of prefix- vs. word-final /s/, is an indirect argument for the proposal that resyllabification is first in each stratum. The alternative analyses proposed by Harris (1993) and Hualde (1991) for C1-type dialects use parochial ordering of resyllabification before or after other rules in the postlexical component to achieve the difference between dialects. These analyses would nonetheless require sandwich application for RNA and C2. Once we admit lexical resyllabification as well as postlexical resyllabification, the need for extrinsic order disappears.

3 Buenos Aires Argentinian and Chinato

We come now to the least profligate aspirating dialects. In the prestige dialect of Buenos Aires, which I described in Kaisse (1996), aspiration is entirely transparent. That is, only aspiration targets that are in a coda on the surface are aspirated and no [h]’s are found on onsets.\textsuperscript{10} /s/ is aspirated before a consonant whether the consonant begins the next syllable, the next morpheme, or the next word.\textsuperscript{11} If the segment after an /s/ is a vowel, the morphology is likewise irrelevant - the /s/ resyllabifies with the vowel and is not aspirated. We achieve this result by restricting the resyllabification-aspiration pair to the postlexical (phrasal) level. (Once we do this, there is really no evidence as to whether resyllabification also applied lexically and it is again a matter of one’s interpretation of the Strong Domain Hypothesis whether one guesses that the language learner has posited word-level resyllabification as well.) It is crucial, however, that aspiration not apply lexically or it will target every word-final /s/ rather than allowing the ones followed by vowel-initial words to be saved by resyllabification. These results are summarized below. The presence of [s] at the very end of citation forms like dōh palas is explained immediately below the table.

\textsuperscript{10} Recall that in Argentinian the phoneme spelled <j> is realized as [x], not as [h].

\textsuperscript{11} It is likely that the Río Negro dialect is also more lavish in its aspiration in another way. Dabrowski (1996) surveyed 5 students at the Universidad Nacional del Comahue in Río Negro province, and found that they frequently aspirated coda /s/ after a consonant (as in inspector, abstractos), while I found that speakers from Buenos Aires did not do this (Kaisse 1996). Caution is in order here, however, since Dabrowski’s speakers were, on average, younger than mine, and aspiration may be extending its application among younger speakers, independent of region.
Aspiration in BAA is sensitive to pause, as documented in Kaisse (1996). Any /s/ before a pause, whether between words, within a word, or at the very end of an utterance, is retained rather than being deaspirated, as one would otherwise have expected of coda /s/ in Spanish. But as brought home to me in different ways by my Argentinian students and by Jim Harris, there are two ways of describing this. We can view BAA as having a similar coda requirement to other dialects but some extra clause preventing aspiration in a coda that precedes a pause. This was the tack I took in 1996, where the pre-pausal /s/ was said to undergo lengthening, thereby immunizing it against aspiration. Another option, Harris’ and, intuitively, that of Argentinian phonology students as well, is simply to say that s aspirates before a consonant in BAA, with no mention of codas:

\[ s \rightarrow h / _C \]

An /s/ before a pause cannot ‘see’ a following consonant, even if there should be one. That is, neither

son buenas/ / ‘they are good’

nor

son buenas/ / ...personas ‘they are good ... people’

contains an /s/ followed by a visible consonant.

This latter solution has the advantage of simplicity -- we do not need the extra clause saying that in BAA /s/ aspirates in a coda except before a pause. In Kaisse (1996) this pause clause was enforced not with a specific injunction against pausal deletion but with a rule lengthening the s before pause. The derived geminate [sː] then escaped aspiration because it did not meet the structural description of aspiration. However, it is surely unfortunate to have to order this gradient s-lengthening rule, a rule of phonetic implementation, before
the phonological rule of aspiration. On the side of my 1996 solution, on the other hand, lies the fact that weakening in codas are more well-attested cross-linguistically that preconsonantal weakenings. Still, recall that there are even dialects of Spanish where /s/ weakens in an onset (see footnote 2). Thus, in the absence of any well worked-out theory of possible debuccalizations, it is difficult to find grounds to choose between the two theories.

An interesting twist on the BAA facts come from a fascinating dialect of Western Spain called Chinato (Hualde 1991 and references cited therein.) Hualde also analyzes Chinato as having postlexical resyllabification and aspiration, in that order, since word final /s/ is unaspirated when the next word begins with a vowel. However, there are two obvious differences from BAA. One is the target of aspiration. Chinato has undergone an unusual set of developments in its coronal fricatives, with the result that it is underlying /d/’s which aspirate in codas. This is not quite as unusual as it might at first sound. Normally aspiration in Spanish targets /s/, /q/ and the rare /f/ found in a coda (Guitart 1976), that is it targets voiceless fricatives. Chinato postvocalic /d/ is spirantized and, according to Hualde, arguably devoiced in the coda as well, so we are debuccalizing /θ/, or at worst, /ð/, not a stop. The other difference from BAA is that the rule is apparently not pause-sensitive. It has the normal coda-environment of other dialects.

Summarizing the Buenos Aires and Chinato dialects, we find:

BAA, Ch: Phrase-level resyllabification
Phrasal aspiration

4 Summary

The following chart gives a summary of the diagnostic cases in the five dialects discussed in this article.

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12 Aspiration itself is somewhat gradient, in that its output ranges from a clearly articulated [h] through slight aspiration, to zero. Thus the ordering of one gradient rule after another is not so egregious as if aspiration were entirely categorical in its application.

13 One more round of thanks to Jim Harris, this time for pointing out the relevance of this dialect.

14 Hualde’s sources did not test the environment between a prefix and a vowel-initial stem. One would have to predict that these would act just like the cases in BAA. Resyllabification should rescue any prefix-final /s/ before aspiration can act upon it. Hualde argues that the order Resyllabification-Aspiration in Chinato, as compared with the (apparent) order Aspiration-Resyllabification in many other dialects argues that syllabification rules have no special place in the grammar and can be extrinsically ordered with other rules. However, we have seen that other dialects are equally well-treated by ordering resyllabification first in each stratum.
The first entry for Chinato indicates that we do not have data available but the analysis predicts that there should be no aspiration of prefix /s/ before a vowel.

The chart below translates these diagnoses into the analyses I have proposed in the text and rates each dialect for the relative transparency of the aspiration rule. Aspiration is transparent to the extent that it has not applied to segments that ultimately end up in onsets.

<table>
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<th>word level asp.</th>
<th>post-lexical resyllab.</th>
<th>post-lexical asp.</th>
<th>asp. in coda</th>
<th>asp. before C</th>
<th>transparent asp?</th>
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<tr>
<td>Carib I</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>vacuous</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Carib II</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>vacuous</td>
<td>yes</td>
<td>no</td>
<td>yes in words, no in phrases</td>
</tr>
<tr>
<td>Rio Negro Argent.</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>vacuous</td>
<td>yes</td>
<td>no</td>
<td>yes in words, no in phrases</td>
</tr>
<tr>
<td>Buenos Aires Argent.</td>
<td>no evidence</td>
<td>no evidence</td>
<td>yes</td>
<td>yes</td>
<td>no?</td>
<td>yes?</td>
<td>yes</td>
</tr>
<tr>
<td>Chinato.</td>
<td>no evidence</td>
<td>no evidence</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
</tr>
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5 References


Guitart, J.M. (1979) On the true environment for weakening and deletion in consonant-weak Spanish dialects, presented at the Conference on Non-English Language Variation in the Western Hemisphere, University of Louisville.


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