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Input and Parameter Resetting in Second Language Acquisition

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Wayne State University

Christine Moritz and Regina Roebuck
Cornell University

0. Introduction

The Principles and Parameters model of language maintains that there is a biologically endowed Universal Grammar (UG) which constrains the shape of natural languages and drives first language (L1) acquisition. This model proposes that the wide range of variation among languages derives from a small set of options, termed parameters, each of which is responsible for a number of linguistic phenomena. For L1 learners, this implies that all properties attributable to a single parameter will be acquired together, although not in any predictable sequence (White 1988).


The present study, adopting a version of the ‘weak hypothesis’, examines the acquisition of the Verb Movement parameter by English speaking learners of French and Spanish. White (1989a, 1991a, 1991b) and Hawkins et al (1993) have claimed that learners can acquire the L2 setting of the Verb Movement parameter but have difficulty in eliminating the L1 setting. Schwartz and Gubala-Ryzak (1992) argue that when the relevant primary linguistic data (PLD) is insufficient, resetting cannot occur. Differential performance by the two groups in this study suggests that the amount of relevant input in the PLD, as determined by the specific
grammatical features of the target language, may be crucial in determining how a parameter is reset.

1. The Verb Movement Parameter

Following analyses by Chomsky (1988) and Pollock (1989), we assume that Verb Movement entails the raising of the verb from \( V^0 \) to \( I^0 \). This movement is obligatory whenever it is possible. There is a parametric difference between English, on the one hand, and French and Spanish, on the other, concerning the specifics of Verb Movement. In English, only auxiliary verbs can raise, whereas in French and Spanish both lexical and auxiliary verbs can, and therefore must, raise. The instantiation of Verb Movement in French and Spanish is evidenced by surface order: the position of adverbs and negative particles, and in the case of Spanish, subject-verb inversion in declarative sentences all result from Verb Movement.

1.1. Adverb Placement

French, English, and Spanish have several possible adjunction sites for adverbs. All three languages are alike in that adverbs adjoin to VP (Pollock 1989, Suñer 1994). Adjunction to this site produces the surface order SaV(O) for English and SVA(O) for Spanish and French, after Verb Movement, as illustrated in (1a) and (1b) below:

(1) a.

\[
\text{Jean} \quad \text{Juan} \\
\text{mange} \quad \text{come} \\
\text{VP} \quad \text{VP} \\
\text{AP} \quad \text{V'} \\
\text{sovent} \quad \text{muchas veces} \\
\text{des pommes manzanas} \\
\text{French and Spanish} \\
\text{SVA(O)}
\]

\footnote{While we assume Pollock's (1989) analysis of IP into TP and AgrP, the distinction between Tense and Aspect is not relevant to this study. Thus, we will refer instead to IP.}
In addition to the VP adjunction site, English can also adjoin adverbs to I', generating the order SaV(O). The fact that French does not have this I' adjunction site produces an apparent symmetry between French and English, with respect to adverb position:

\[
\begin{align*}
(2) & \quad \text{a.} \quad \ast \text{Jean souvent mange des pommes.} & \ast \text{SaV(O)} \\
& \quad \text{b.} \quad \text{Jean mange souvent des pommes.} & \text{SVa(O)} \\
(3) & \quad \text{a.} \quad \text{John often eats apples.} & \text{SaV(O)} \\
& \quad \text{b.} \quad \ast \text{John eats often apples.} & \ast \text{SVa(O)}
\end{align*}
\]

Some researchers (White 1989a, 1989b, 1990, 1991a, 1991b, Hawkins et al. 1992, Trahey and White 1993) propose that SaV(O) and SVa(O) are in complementary distribution and should never co-occur in a single language. This conclusion is erroneous: a language with Verb Movement may also have the SaV(O) order because of the additional I' adjunction site (Pollock 1989). Such is the case in Spanish, as evidenced by the sentences in (4):

\[
\begin{align*}
(4) & \quad \text{a.} \quad \text{Juan ya salió.} & \text{SaV} \\
& \quad \text{John already left} \\
& \quad \text{‘John already left.’} \\
& \quad \\
& \quad \text{b.} \quad \text{Juan salió ya.} & \text{SVa} \\
& \quad \text{John left already} \\
& \quad \text{‘John left already.’}
\end{align*}
\]
1.2. Negation

The placement of negative elements in French and Spanish is also accounted for by Verb Movement. In standard French, negation is obligatorily bipartite, with both elements generated in NegP: the [+neg] particle ‘ne’ in Neg⁰ and either the negative participle pas (neg) or a Negative Polarity Item (NPI) in [Spec, NegP] (Pollock, 1989, Laka (1990). The verb, raising from V⁰, picks up the clitic ‘ne’ before landing in I⁰, producing the order SnpVNPNI⁰ (5):

(5)

While in spoken French ‘ne’ is not always phonologically realized, the presence of an overt item in [Spec, NegP] is obligatory, even in the case of simple sentential negation (6), as well as in adverbial negation (as was the case in (5)):

(6)  Louis ne fait pas ses devoirs.  SnVnegO
    Louis not does NEG his homework
    ‘Louis doesn’t do his homework.’

Spanish differs from French in this respect: simple sentential negation (7a) is unipartite, whereas adverbial (7b) negation is bipartite.²

² Spanish has two additional possible configurations for Negation, neither one of which results from Verb Movement:

(ia) Luis no hace su tarea nunca.  SnVOPI
    Luis not does his homework NPI
    ‘Luis never does his homework.’
(7)  
a. Luis no hace su tarea.  \hspace{1cm} \text{SnVO}  
   Luis not does his homework  
   ‘Luis doesn’t do his homework.’  

b. Luis no hace nunca su tarea  \hspace{1cm} \text{SnVNPI}  
   Luis not does NPI his homework  
   ‘Luis never does his homework.’  

1.3. Inversion  

Subject-Verb Inversion, or more specifically, VS(O) order, in Spanish declarative sentences also provides evidence for Verb Movement. Subjects in Spanish are not obliged to raise to [Spec, IP] as they are in French and English (cf. Suñer 1994, and references therein). Thus, when the verb raises, and the subject remains VP-internal, the order VS(O) results, as seen in (8) (Suñer 1994):  

(8) Dijo Juan la verdad  \hspace{1cm} \text{VSO}  
   spoke Juan the truth  
   ‘Juan spoke the truth.’  

2. Previous Studies  

Examining the Verb Movement parameter in second language acquisition, White studied French-speaking students in an English immersion program, questioning specifically the need/usefulness of negative evidence in solving the ‘learnability problem’ in the acquisition of adverb placement (see White 1990, 1991a, and 1991b). Using Pollock’s formulation of the Verb Movement parameter, White hypothesized that learners would at first transfer their native French setting of [+movement] (allowing SVa(O), but not SaV(O)) and that as they came to acquire an understanding of the English setting, they would reset to [-movement] (disallowing SVa(O), but allowing SaV(O)). Additionally, she proposed that explicit positive evidence is insufficient — learners need negative evidence in order to realize that SVa(O) is not allowed in English. To test these hypotheses, White compared two groups of learners receiving different types of input: the experimental group received instruction on adverb placement (including explicit negative and positive evidence),  

(ib) Luis nunca hace su tarea.  \hspace{1cm} \text{SnPIVO}  
   Luis NPI does his homework  
   ‘Luis never does his homework.’
while a control group received instruction in question formation (with no explicit evidence - negative or positive - regarding adverb placement).

White’s hypotheses were mostly borne out: her subjects did transfer their L1 settings at first, and the adverb group showed a significant improvement in their acquisition of the correct SaV(O) order and at the same time rejected the ungrammatical SVaO order. The question group showed some improvement in their acceptance of the SaV(O) forms, but did not correspondingly reject the SVa(O) order. White concluded that direct negative evidence is important for French speakers to learn the impossibility of SVa(O) in English. However, a follow-up test one year later showed that both groups of learners had reverted to their pre-test behavior, accepting a significant amount of the *SVa(O) structures and fewer of the correct SaV(O) forms.

These results are obscured, however, by White’s interpretation of the Verb Movement parameter as strictly symmetrical. That is, she posits that SVa(O) (an order produced by movement) and SaV(O) (a result of no Verb Movement) should never co-occur. This restriction is only true when speaking of VP-joined adverbs. A language with movement may still attest the SaV(O) order if I’ adjunction is allowed. This symmetrical interpretation results in two erroneous assumptions. First, White assumes that for the L2 learner, the SaV(O) order constitutes positive evidence for a [-movement setting]. However, this order is ambiguous and can provide evidence for either an I’-joined adverb or for [-movement]. Therefore, we would expect that negative evidence is required to resolve this ambiguity. Second, White assumes that subjects’ acceptance and production of SaV(O) is evidence that they are resetting the parameter. They may, in fact, be learning that English has I’ adverbs. Thus, the production/acceptance of SaV(O) by French speaking learners of English does not allow one to determine whether or not the Verb Movement parameter has been reset. The presence of the SVa(O) order in learners’ grammar, on the other hand, only suggests that the learners still haven’t rejected the L1 setting, and says nothing about resetting.

Schwartz and Gubala-Ryzak (1992) re-examined White’s Verb Movement studies, and found inconsistencies within the data which led them to conclude that the knowledge that students displayed was not the result of a UG-constrained grammar. This being the case, the question of whether learners had reset the parameter or not is essentially moot. Schwartz and Gubala-Ryzak propose that only primary linguistic data (defined as ‘(contextualized) utterances in the ambient language’ (Schwartz and Gubala-Ryzak 1992:2)) can reach the UG-constrained grammar and restructure it: neither negative nor explicit positive evidence are ever sufficient. Schwartz and Gubala-Ryzak further theorize that for French learners of English, there is simply not enough primary linguistic
data (PLD) available about the parameter setting, due to the way the parameter is instantiated in English. Thus, they ultimately conclude that in spite of both negative and explicit positive evidence, Francophones learning English will never reset the Verb Movement parameter.

Trahey and White (1993) address the question of primary linguistic data in light of the Uniqueness Principle, as suggested by Pinker (1984). This learning principle stipulates a one-meaning-one-form constraint on grammar, which Trahey and White apply to parameter resetting in SLA. They predict that L2 learners should not entertain both settings of a parameter at the same time, and that adoption of the L2 setting necessarily implies the rejection of the L1 setting. They compare data from White (1990, 1991a, and 1991b) with a new experimental group that was ‘flooded’ with naturalistic input specially modified to heighten subjects’ awareness of adverb placement, without providing explicit evidence.

Posttests indicated that the ‘flood group’ learned that SaVO is possible but did not dismiss SVA(O), suggesting that they had paid attention to the input but had not reset the parameter, a performance similar to that of the subjects in White’s earlier studies. Trahey and White conclude that even enhanced primary linguistic data did not cause the preemption of the L2 setting: subjects are apparently entertaining both values of the parameter. Thus, they suggest that the Uniqueness Principle was not operative, perhaps because exposure to the enhanced input was limited to two weeks.

These results, however, need to be interpreted with the same caution as with those of White (1990, 1991a, and 1991b). That is, there is no reason why both SVA(O) and SaV(O) cannot occur in a single language, due to the possibility of I’ adverbs, as Trahey and White themselves note (1993: n.5). Thus, even enhanced evidence of SaV(O) does not provide evidence that SVA(O) is impossible. Moreover, Schwartz and Gubala-Ryzak show that there is in fact little evidence in English that SVA(O) is ungrammatical. Therefore, it is predictable that learners attest both orders in their grammars.

Hawkins, Towell and Bazergui (1993) examined the acquisition of Verb Movement by L1 English learners of French. These researchers, like White, assume that the distribution of SaV(O) and SVA(O) orders is symmetrical and a consequence of the parameter. They predict, therefore, that as the grammatical order (SVA(O)) is acquired for the L2, the ungrammatical order (SaV(O)) will be abandoned. Furthermore, Hawkins et al. expect that knowledge of surface orders derived from Verb Movement (such as the placement of adverbs, negative particles, and floating quantifiers) should be acquired simultaneously as the parameter

---

3 Floating quantifiers move into adverbial positions and thus pattern
is reset.

Hawkins et al. tested two groups of English learners of French (intermediate and advanced levels) for their intuitions about the placement of manner/frequency adverbs, as well as the negative participle *pas* and the floating quantifier *tous*. Both groups were accurate on negation and exhibited a high acceptance rate of the grammatical SVA(O) placement of adverbs. Of particular interest is the fact that both groups, in spite of near-native performances on the adverbs and *pas*, did quite poorly on the sentences with *tous* following a lexical verb. This suggests that these three Verb Movement-related structures were not acquired simultaneously as the model had predicted.

In order to explain these results, Hawkins et al. propose that while it may seem that students are not accessing the Verb Movement parameter, they are instead exploiting other UG-given knowledge. In accepting SVA(O), subjects are using knowledge of other aspects of UG, such as *move alpha* or affix lowering, to manipulate surface order, thus mimicking native speaker performance. However, Hawkins et al. do not explain why learners draw on this knowledge only for the placement of adverbs and negation, and not for the placement of floating quantifiers.

3. The Present Study

This study departs from previous research in several ways. First, we are expanding the data base to include two groups of learners: English speaking learners of French and of Spanish. For English speakers, the acquisition of either of these languages involves resetting to [+movement], a process which should be the same for both groups. Like Hawkins, we expect to find a correlation among three consequences of Verb Movement: adverb placement, negation, and in Spanish, inversion. Importantly, with regard to adverb placement, we only consider acceptance of SVA(O) as evidence towards resetting, since, as we have said, neither acceptance nor rejection of SaV(O) provides clear information regarding the status of the parameter in the learner’s grammar. Finally, this study examines the acquisition of the Verb Movement parameter across different levels of proficiency without looking at the effects of special experimental treatments; thus, it does not address the issue of positive versus negative evidence.

like adverbs, occurring postverbally in French and Spanish, and preverbally in English (Pollock, 1989):

(i)  
    a. The children *all* eat ice cream.  
    b. Les enfants mangent *tous* de la glace.  
    c. Los muchachos *todos* comen helado.
3.1. Hypotheses

As learners work towards acquiring Verb Movement, we assume that they will initially project their L1 setting onto their L2 interlanguage. As subjects gradually develop a new analysis of the L2 parameter, they will likewise accept, to an increasing degree, surface forms which manifest evidence of Verb Movement, such as \( \text{SVa(O)} \), negation of the type \( \text{SnVNP}(O) \), and in Spanish, inversion. The motivating hypothesis for this study is that a resetting of the Verb Movement Parameter will be accompanied by a correlation among these three instantiations of Verb Movement. That is, if learners accept subject-verb inversion in Spanish, they should also accept \( \text{SVa(O)} \) order and the negation order \( \text{SnVNP} \), and vice versa. This same correlation should also be found for English speakers learning the \( \text{SVa(O)} \) order and bipartite negation of French. Because the model does not predict that there be a hierarchy among forms that fall out from a single parameter, we expect concurrent acquisition of the three Verb Movement forms under consideration. That is, there is nothing to suggest that one of the forms should be acquired before the others.

3.2. Subjects

A total of 33 French and 27 Spanish learners from beginning, intermediate, and advanced language classes at Cornell University participated in our study. Additionally, 5 native Spanish speakers and 6 native French speakers served as controls.

In selecting our subjects, we controlled for three factors which we felt might influence the results of the experiment. A primary concern was the possibility that students would be exposed to overt teaching of the forms to be tested, which could potentially influence their responses. We therefore looked for subjects from classes where explicit grammar teaching is kept to a minimum, though at the beginning level, our choice was limited to introductory courses, in which grammar is a major component. At the upper levels, we selected students from introductory literature, conversation, pronunciation, and stylistics classes. Secondly, all subjects were native, monolingual speakers of English, with little or no exposure to other Romance languages. Finally, given the controversy surrounding the critical period hypothesis in second language acquisition, we accepted only volunteers who had begun their study of the target language at age 12 or older.

3.3. Tasks and Procedures

For the purposes of our study, two tasks were administered to the
subjects. The first, a cloze test, was given in order to ensure relatively equivalent language proficiency within levels. The second was a Sentence Acceptability Task administered to assess the learners’ knowledge of Verb Movement.

3.3.1. Cloze test

The subjects represented a wide range of previous experience in the target languages and their relative proficiency was not necessarily reflected by the level of the courses in which they were enrolled at the time of the study. For this reason, all subjects were administered a cloze test in order to ascertain their relative proficiency levels. The French cloze was an adaptation of a text found in a first-year French textbook. The Spanish cloze was a translation of the adapted French text, with an effort made to delete the same or equivalent items in both texts, in order to ensure that the results would be comparable across language groups.

3.3.2. Sentence Acceptability Task

Both the French and Spanish versions of the task contained six items that tested adverb placement and four items which dealt with negation, as well as distractors. Additionally, on the Spanish test, there were four items concerning inversion; on the French test, these four sentences were replaced by additional distractors, to ensure equal test length. (See Appendix for a list of test sentences).

Each test item included a lead-in sentence, followed by two test sentences for the subjects to consider. The lead-in sentences were provided in order to limit the pragmatic context in which the two following sentences would be analyzed. Within these pairs of test sentences, one was a target sentence, intended to provide information about the subjects’ analysis of Verb Movement; the other was meant only as a distractor (see examples in the following section). For each pair of sentences, subjects were asked to choose one of five responses: a) only a sounds ok; b) only b sounds ok; c) both a & b sound ok; d) neither a nor b sound ok; and e) I really don’t know. All items were randomized. Within the pairs of test sentences, the order of the target and distractor sentences was also randomized. Furthermore, to control for the possibility that the length of the test might be a factor in subjects’ responses, two versions of the Sentence Acceptability Task were developed, using reverse ordering of items. Likewise, to control for the possibility that the Sentence Acceptability Task might influence subjects’ performance on the cloze test (or vice versa), approximately one-half of the subjects received the cloze test first, and the other half received the Sentence Acceptability Task first.
3.3.2.1. Adverbs

These items consisted of an SVa(O) sentence contrasted with a distractor sentence, of either SV(O)a order or SaV(O) order.

(9) a. Elle conduit prudemment la voiture de son père. (SVaO) she drives carefully the car of her father 'She carefully drives her father’s car.'

b. *Elle prudemment conduit la voiture de son père.*(SaVO) she carefully drives the car of her father 'She carefully drives her father’s car.'

(10) a. Mientras espera, Martín bebe lentamente while 3sg waits, Martin drinks slowly su café. (SVaO) his coffee 'While he waits, Martin slowly drinks his coffee.'

b. Mientras espera, Martín bebe while 3sg waits, Martin drinks su café lentamente. (SVOa) his coffee slowly 'While he waits, Martin drinks his coffee slowly.'

3.3.2.2. Negation

The negation sentences contrasted SnVNPi(O) and SnV(O)NPI orders. Note that the second of these orders is ungrammatical in French, but grammatical in Spanish.

(11) a. Elle ne fait jamais la vaisselle. (SnVNPiO) she not do NPI the dishes 'She never does the dishes.'

b. *Elle ne fait la vaisselle jamais. (SnVONPI) she not do the dishes NPI 'She never does the dishes.'

(12) a. Juan no pone nunca la radio. (SnVNPiO) John not turn-on NPI the radio 'John does not turn on the radio ever.'
b. Juan no pone la radio nunca. (SnVONpI)
    John not turn-on the radio NPI
    'John does not turn on the radio ever.'

3.3.2.3. Inversion in Spanish

Four sentences contrasted SV(O) and VS(O) orders.

(13) a. Por la tarde la usa Cristina. (VS)
    in the evening it uses Cristina
    'In the evening, Cristina uses it.'

    b. Por la tarde Cristina la usa. (SV)
    in the evening Cristina it uses
    'In the evening, Cristina uses it.'

4. Results

4.1. Cloze Results

As expected, the results of the cloze test indicated that there was some variation in proficiency within class levels, as seen in Table 1, below:

Table 1: Cloze performance by class level

<table>
<thead>
<tr>
<th>FRENCH</th>
<th>SPANISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>Mean*</td>
</tr>
<tr>
<td>100</td>
<td>18.1</td>
</tr>
<tr>
<td>(n=11)</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>26.0</td>
</tr>
<tr>
<td>(n=11)</td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>28.2</td>
</tr>
<tr>
<td>(n=11)</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>24.1</td>
</tr>
<tr>
<td>(N=33)</td>
<td></td>
</tr>
</tbody>
</table>

* Number correct out of 38.

In order to reduce the variation which emerged within class levels, subjects were regrouped according to their cloze scores. The regrouping shown in Table 2 was used for the statistical analyses of the Sentence Acceptability Task. An analysis of variance (ANOVA) showed that the Spanish subjects, on the whole, were significantly more proficient than their French counterparts. \( F = 6.60, p = 0.01 \).
Table 2: Cloze performance by new groupings

<table>
<thead>
<tr>
<th></th>
<th>FRENCH</th>
<th></th>
<th>SPANISH</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>Mean*</td>
<td>SD</td>
<td>Group</td>
<td>Mean*</td>
</tr>
<tr>
<td>1 (n=10)</td>
<td>16.8</td>
<td>3.1</td>
<td>1 (n=10)</td>
<td>23.8</td>
</tr>
<tr>
<td>2 (n=14)</td>
<td>25.1</td>
<td>1.7</td>
<td>2 (n=9)</td>
<td>27.1</td>
</tr>
<tr>
<td>3 (n=9)</td>
<td>30.4</td>
<td>2.7</td>
<td>3 (n=8)</td>
<td>32.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>24.1</td>
<td>5.9</td>
<td>TOTAL</td>
<td>27.4</td>
</tr>
<tr>
<td>(N=33)</td>
<td></td>
<td></td>
<td>(N=27)</td>
<td></td>
</tr>
</tbody>
</table>

* Number correct out of 38.

4.2. Sentence Acceptability Task Results

Table 3 represents the data from the Sentence Acceptability Task.

Table 3: Mean % Acceptance of Target Items

<table>
<thead>
<tr>
<th></th>
<th>FRENCH</th>
<th></th>
<th>SPANISH</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adverb</td>
<td>Negation</td>
<td>Group</td>
<td>Adverb</td>
</tr>
<tr>
<td>Group</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>1</td>
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<td>2</td>
<td>71</td>
<td>96</td>
<td>2</td>
<td>46</td>
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<tr>
<td>3</td>
<td>78</td>
<td>100</td>
<td>3</td>
<td>67</td>
</tr>
<tr>
<td>NSs*</td>
<td>83</td>
<td>100</td>
<td>NSs*</td>
<td>87</td>
</tr>
</tbody>
</table>

*NSs = Native speaker controls

4.2.1. Adverb Placement

Group One French subjects show a moderate acceptance of the target order forms (SVa(O)); acceptance improves steadily across Groups Two and Three, with Group Three reaching an acceptance rate comparable to native speakers. The Spanish subjects, on the other hand, show a slightly lower, moderate acceptance of the SVa(O) order for Groups One and Two, and then an apparent improvement, but their acceptance level does not reach a point which is comparable to the Spanish native speakers.

4.2.2. Negation

French subjects' acceptance of the target order, SnVNPi(O)) begins very high, and remains at a level comparable to native speaker performance. For the Spanish learners, acceptance of the target order is only moderate
across all groups, and consistently lower than the native speakers.\(^4\)

### 4.2.3. Inversion

Spanish learners in Group One have a low acceptance rate of the inversion order, VS(O). They are somewhat better in Groups Two and Three, comparable to the native speaker acceptance level. However, we note that, contrary to our expectations, the acceptance level of inversion sentences by native speakers is only 50%. Posttest comments by native speakers indicated that, in spite of the grammaticality of all of the target inversion sentences, only one of four sentences satisfied the pragmatic criteria which constrain the use of Inversion in Spanish (cf. Bentivoglio 1986). We do not claim, however, that the reluctance of the learners to accept the VS(O) order is a result of their knowledge of pragmatics, since, upon examination of individual data, it was determined that the subjects’ responses did not pattern like those of the native speakers. Instead, learners consistently rejected the one pragmatically acceptable instance of inversion. Thus, we interpret the subjects’ rejection of VS(O) sentences to be due to a resistance to Verb Movement.

### 4.3. Statistical Analyses

Correlations for all possible combinations of target items on the Sentence Acceptability Task were run for each language group and for each level within language groups.\(^5\) Significant correlations are presented in Table 4, below:

<table>
<thead>
<tr>
<th>Description</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP Adv. x Inv.</td>
<td>.51</td>
<td>.0071</td>
</tr>
<tr>
<td>SP-3 Adv. x Inv.</td>
<td>.72</td>
<td>.0456</td>
</tr>
</tbody>
</table>

A significant, moderate correlation between Adverbs and Inversion was found for the Spanish subject group as a whole. Among the individual groups, only Group Three showed a significant, high correlation between the two forms. No correlation between Adverbs and Negation was found for either language group. Recall that the French subjects did very well on Negation at all levels; this near-perfect performance makes it impossible

\(^4\) The acceptance levels of the native speakers were lower than expected, due to the responses of one particular speaker.

\(^5\) Test version and the order in which test were taken (cloze or SAT first) had no significant effect on subjects' performance.
to correlate Negation results with the Adverb results.

The fact that more correlations were not found, especially between the individual groups, motivated an analysis of the data from another angle. Considering that the French learners outperformed their Spanish counterparts with regard to the target orders, and because no correlation was found on Adverb placement and Negation for the individual groups, an ANOVA was performed on the two language groups for Adverbs and Negation. The results are shown in Table 5:

**Table 5: ANOVAs, Language Group x Target Structure**

<table>
<thead>
<tr>
<th>Description</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language x Adverbs</td>
<td>19.78</td>
<td>.0000</td>
</tr>
<tr>
<td>Language x Negation</td>
<td>186.83</td>
<td>.0000</td>
</tr>
</tbody>
</table>

The ANOVA shows a significant difference between the French and Spanish subject pools with regard to Adverbs and Negation. That is, the French subjects accept Verb Movement more often than the Spanish subjects on both Adverb Placement and Negation. This difference is significant in both cases.

5. **Discussion**

Our original hypotheses stated that resetting of the Verb Movement Parameter would be evidenced through correlations between the relevant target structures. However, all expected correlations were not found, with the exception of a correlation between Adverbs and Inversion in Spanish, and a seemingly strong relationship between Adverbs and Negation in French. Additionally, the ANOVAs showed that the French subjects performed significantly better on Adverbs and Negation than did their Spanish counterparts. These results suggest that the French subjects have begun to solve the puzzle of Verb Movement. At the same time, the Adverb/Inversion correlation for the Spanish learners suggests that they are beginning to develop a new analysis of the parameter, and yet seem to be missing an important part of the puzzle — knowledge that SnVNP(O) is possible. We assume, of course, that both Spanish and French learners have equal access to UG. The question then becomes, why do the French learners perform so much better than the Spanish learners on the critical items? We cannot attribute their better performance to higher proficiency, since the results of the cloze test showed that the French subjects were significantly less proficient overall than the Spanish subjects.

An explanation for the differential performance on the target structures may be found by considering the types and amount of input that the two language groups receive. By this we do not refer to a
quantitative description of explicit positive or negative evidence, that is, the metalinguistic information that learners receive in the classroom. Rather, we refer to the primary linguistic data that students are exposed to, and to the amount of evidence for Verb Movement that this data provides, due to the inherent features of the two languages, which may vary according to the grammatical features of the language. That is, the facts of French are such that all negation, both simple sentential and adverbal negation, provides overt evidence for Verb Movement. Thus, every instance of negation tells learners that Verb Movement occurs in French. In Spanish, however, simple sentential negation does not provide evidence for movement, and there are at least three competing possible configurations for expressing adverbal negation, only one of which overtly exhibits Verb Movement. Spanish learners do not receive evidence for Verb Movement with every instance of negation: French learners actually receive more information about Verb Movement via Negation than do Spanish learners. This is consistent with Schwartz and Gubala-Ryzak's (1992) findings that PLD is a crucial component to UG-driven acquisition, and furthermore, that the amount of information within this data which provides evidence for the parameter setting in question may determine the learners' success at resetting. Thus we can explain why the French subjects, who receive relatively more of the critical input, perform better than the Spanish subjects on the target Negation forms.

It would be tempting to extend this explanation to account for the differential performance of the two groups on Adverbs, since there is an apparent difference in amounts of input for Adverb Placement in the two languages. Sentential adverbs aside, French has one surface position for adverbs, a post-verbal position, which results from Verb Movement. Spanish, because it may adjoin adverbs to I', evidences two surface orders, only one of which provides evidence for Verb Movement. However, since the number of adverbs which can occur in the I' position is limited (Suñer, 1994), we believe that in terms of Adverb Placement, both languages have a relatively equivalent amount of information about Verb Movement. Given this, we would expect the Spanish learners to do as well as the French learners on Adverb placement (or better, given their higher proficiency). As this was not found to be the case, we need to consider the relationship between Adverb Placement, Negation, and Inversion. The fact that the French students are doing better on Adverb Placement suggests that these learners are getting additional information about the parameter. We argue that this information comes from their analysis of Negation; that is to say, acquisition of Negation may act as a catalyst for acquisition of Adverb Placement in French. The fact that the Spanish learners, who have a weaker analysis of Verb Movement based on
Negation, perform significantly worse on Adverb Placement supports the hypothesis that Negation is crucial to understanding the parameter and therefore Adverb Placement.

The performance of the Spanish learners indicates that they do not develop an understanding of the Verb Movement parameter as quickly, and in the same way, as the French subjects, i.e. via Negation. Instead, the fact that Adverbs and Inversion correlate for the high-level Spanish speakers suggests that Inversion provides the majority of the information about the parameter for Spanish learners. This would imply that once the Spanish subjects formulate a [+movement analysis] for Inversion, they would also accept other Verb Movement-related forms. Furthermore, because Inversion in Spanish is optional and subject to discourse constraints, learners are likely to take longer to master this structure. Thus, if Inversion, a discourse-level phenomena, is the best evidence for Verb Movement available to Spanish learners, it is not surprising that they take longer to correctly analyze their L2 as having Verb Movement than the French learners, who already have access to the critical input at the level of syntax.

In conclusion, while we did not find all of the correlations we had expected at the outset of our study, we did find evidence that learners were working toward a reanalysis of the Verb Movement parameter. Moreover, we found that the amount of relevant information in the primary linguistic data is crucial in determining how a parameter is reset in second language acquisition. Additionally, the amount and consistency of relevant information for a given parameter may vary, based on the grammatical features of the languages in question. This implies that for each language a different feature may drive the resetting of a parameter, as has been argued here for the acquisition of the Verb Movement parameter in Spanish and French.
Appendix: Acceptability Task Sentences

FRENCH

Adverb placement

1. L’après-midi, Michel achète un journal.
   Il lit silencieusement le journal.
   Il lit le journal silencieusement.

2. Martin attend son ami au restaurant.
   Pendant qu’il attend, il boit lentement son café.
   Pendant qu’il attend, il lentement boit son café.

3. Elizabeth vient de passer son permis de conduire.
   Elle conduit prudemment la voiture de son père.
   Elle prudemment conduit la voiture de son père.

4. La voiture de David est très vieille, et ne marche pas bien.
   David achètera enfin une nouvelle voiture.
   David achètera une nouvelle voiture enfin.

5. Demain, c’est le jour de la Saint Valentin.
   Jean achètera aujourd’hui des bonbons pour sa petite amie.
   Jean aujourd’hui achètera des bonbons pour sa petite amie.

   Je verrai la semaine prochaine un film de Louis Malle.
   Je verrai un film de Louis Malle la semaine prochaine.

Negation

1. Luc est un garçon de six ans.
   Il ne traverse jamais la rue sans sa mère.
   Il ne traverse la rue jamais sans sa mère.

2. Sally a beaucoup de devoirs à faire ce semestre.
   Alors elle ne regarde plus la télévision.
   Alors elle ne regarde la télévision plus.

3. Michel a cassé ses lunettes.
   Il ne voit pas le tableau noir en ce moment.
   Il ne voit le tableau noir pas en ce moment.

4. Sara déteste faire la vaisselle.
   Elle ne fait jamais la vaisselle.
   Elle ne fait la vaisselle jamais.
SPANISH

Adverb placement

1. Martín está esperando a su amigo en el restaurante.
   Mientras espera, Martín bebe lentamente su café.
   Mientras espera, Martín bebe su café lentamente.

2. Por la tarde, Lisa compra un periódico.
   Lisa lee silenciosamente el periódico.
   Lisa silenciosamente lee el periódico.

3. Isabel acaba de sacar su licencia de conducir.
   Isabel conduce cuidadosamente el coche de su padre.
   Isabel cuidadosamente conduce el coche de su padre.

4. El coche de David es muy viejo y ya no funciona muy bien.
   David va a comprar por fin un coche nuevo.
   David va a comprar un coche nuevo por fin.

5. Mañana es el día de San Valentín.
   Mario compró hoy dulces para su novia.
   Mario hoy compró dulces para su novia.

   Vi ayer una película de Almodóvar.
   Vi una película de Almodóvar ayer.

Negation

1. A Juan no le gusta mucho la música moderna.
   Juan no pone nunca la radio.
   Juan no pone la radio nunca.

2. Pablo es un muchacho muy tímido.
   Por eso no baila nunca el tango en las fiestas.
   Por eso no baila el tango nunca en las fiestas.

3. María no tiene cable.
   María no mira nunca la televisión.
   María no mira la televisión.

4. Elvira quiere ir a Harvard el año que viene. Por eso, siempre está estudiando.
   Elvira no escribe nunca cartas a sus amigos.
   Elvira no escribe cartas a sus amigos.
Inversion

1. Anoche Juan le escribió una carta larga a sus padres...
   ...y le escribió María a su abuela.
   ...y María le escribió a su abuela.

2. Ayer Lisa compró una falda y una blusa por solamente diez dólares
   También compró Elena mucha ropa barata.
   También Elena compró mucha ropa barata.

3. Tomás y Cristina comparten la computadora. Tomás la usa por la
   mañana.
   Por la tarde la usa Cristina.
   Por la tarde Cristina la usa.

4. En clase Natàlia dijo que Lima era la capital de Perú.
   ...aunque dijo Susana que era Cuzco.
   ...aunque Susana dijo que era Cuzco.
References


A Sociolinguistic Analysis of a Change in Progress: Pronominal Overtness in Puerto Rican Spanish

Bárbara I. Avila-Jiménez
SUNY Buffalo

0. Introduction

It is a known fact that in Spanish, phonetically null pronominals may alternate with either an overt pronominal or a full noun phrase. In the last decade, however, Puerto Rican Spanish (PRS) has received much attention due to an increase in the use of subject pronouns (40%) when compared to other varieties of Spanish (20%). Several hypotheses has been put forth in order to account for its causes. Alvarez Nazario (1983) attributed the high rates of pronominal use to the influence of American English on PRS. Nevertheless, Morales (1986a) and Yamín (1991) found no conclusive evidence correlating the influence of English and the high rates of pronominal use in PRS. Hochberg (1986a,b) hypothesized that this increase was linked to the weakening and/or deletion of final /s/ and /n/ in inflectional morphemes. Thus, she proposed a functional explanation for this phenomenon: since the inflectional morphemes that distinguish for person in the verb paradigm can be omitted, personal pronouns are used more often in order to compensate for the ambiguity in person that might arise. However, Avila-Jiménez (1992) and Cameron (1992) found that even though the functional hypothesis can account for the higher rates of specific ‘tú’ (you), it fails to explain the increase in use of first and third person singular pronouns. Furthermore, it fails to explain why third person plural pronouns are not used overtly at a higher rate, given the possibility of /n/ deletion in the verb form for this person.

Of all the studies of this syntactic variation, only Morales (1986a) has reported on a significant sociolinguistic factor that was correlated to this phenomenon, namely, age differentiation. However, in Avila-Jiménez (1992), I found other social factors which were significant in the distribution of pronominal use among twelve PRS speakers. In order to further investigate this discrepancy in results on social variables, I analyzed the speech of 59 PRS speakers. This study presents a sociolinguistic characterization of the use of null and overt pronominals in
the speech of those speakers. The social factors age, style, education, occupation, gender and place of origin are studied together with their correlation with pronominal distribution. Furthermore, the results obtained are examined in the light of the recurring principles and phenomena observed in sociolinguistic research.

1.0. Methodology

The PRS corpus analyzed for this study is based on the transcription of the speech of 28 men and 31 women between the ages of 10 and 85 years old. These interviews were performed during 1992-1993 with speakers from 26 of the 78 different municipalities into which Puerto Rico is divided. Two interview sessions with a total of 8 children between 5-9 years of age (4 boys and 4 girls) were added to these 37 sessions. These interviews were performed by Richard Cameron during 1989 in a public school in the San Juan Metropolitan Area.1

The interviews were conducted at the speaker's residence or work place. In order to minimize the attention paid to speech, the interviews focused on the games and pranks the interviewees used to play at school, home, and in other groups in which they participated as children and adults.

For the sociolinguistic analysis, only declarative sentences were considered. A total of 4,800 tokens of occurrences of a tensed verb with a subject pronoun, whether overt or null, were chosen from approximately 30 minutes of interview (1).

(1) Entonces yo cogí clases de décimo y cuarto año estando en décimo y entonces ya Ø podía coger por la mañana...(PR92007)
Then I took classes of tenth and fourth year being in tenth and then already Ø could to take by the morning.
Then I took classes from both tenth and twelfth grade while in tenth grade and because of that I could then attend school in the morning.

Following Avila-Jiménez (1992), there were some exclusions from the corpus:

---

1 I am indebted to Richard Cameron, not only for facilitating the interviews with children, but for his helpful comments and suggestions at the initial stages of this research.
A. Discourse markers which occur with an obligatory subject pronoun, e.g., tú sabes, tú ves, tú entiendes, qué sé yo.

(3) ...y en las carreras él gana dinero, tú sabes, la última carrera...
   (PRU89019)
   ...and in the races he wins money, you know, the last race...

B. Discourse markers which occur obligatorily without a subject pronoun, e.g., viste, digo.

(4) ...a él le gusta el dulce, digo, yo creo (PRI89002)
   ...he likes sweets, (I) mean, I think so.

C. Imperatives. They normally do not require a personal pronoun unless used for contrastive purposes. Thus, given the predictability of the distribution of pronouns, imperatives were excluded from the analysis.

(5) Ø Vete de aquí.
    Get out from here.

(6) No, vete tú. (contrast).
    No, you get out.

D. Impersonal constructions with ‘hace’, ‘ser’, ‘se’ and existential ‘haber’. These constructions are subjectless.

(7) yo lo llamé...hace como dos o tres semanas y le dije...(PRI89006)
    I called him...two or three weeks ago and I told him...

E. Subject headed relative clauses in which its head is the subject of the verb. These relative clauses might occur with a resumptive subject pronoun in certain occasions, however these cases are not frequent. Therefore, such clauses were not included in this study.

(8) Los dominicanos que Ø han estado aquí, que Ø son tercera o segunda generación...(PRI9020)
    The Dominicans who have been here, who are third or second generation...

F. Subjects of infinitives or participles. They can sometimes occur with an overt subject however, they were not included in this study given that none of these forms has an inflected verb.

(9) Yo estar ahí y...(PRI89010)
    I to be there and...
G. Constructions with gapped verbs. In these constructions the pronoun is obligatory only when the subject of the gapped verb is different. Nevertheless, no cases of this type were found in the corpus studied.

(10) Laura telefoneó a Luisa y tú a Juan Carlos.
Laura called Luisa and you to Juan Carlos.

Sociolinguistic variables analyzed\(^2\) were: age, style, education, occupation, gender, and geographical area. The latter was added in an attempt to explain differences found from the comparison of Avila-Jiménez (1992) to previous studies of this variable (Hochberg, 1986a,b; Morales, 1986a; and Cameron, 1992). It was hypothesized that besides the need for a larger sample of speakers, the speakers’ place of origin could explain some of the differences found among these studies. The reason behind this hypothesis being that most of the studies of PRS are based on interviews to speakers from the San Juan Metropolitan Area and Avila-Jiménez (1992) included several speakers from areas outside San Juan.

2.0. Results

Table 1 reveals a speech community that favors in general the use of null pronominals, 60\%. First and third person singular pronouns occurred most frequently in the corpus. The explanation for this can be found in the type of discourse in which the corpus is based, personal interviews. The feature (- specific) next to some pronouns signals the use of these forms without a determined reference in the discourse.

\(^2\) For statistical analyses ‘A Program by Ron’ designed by Dr. Ron Breiger from Cornell University was used.
Table 1. Distribution of Pronouns for the Corpus of 59 PRS Speakers.

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Null</th>
<th>Overt</th>
</tr>
</thead>
<tbody>
<tr>
<td>yo</td>
<td>49% (1045)</td>
<td>51% (1077)</td>
</tr>
<tr>
<td>tú</td>
<td>41% (52)</td>
<td>59% (76)</td>
</tr>
<tr>
<td>tú (-specific)</td>
<td>37% (31)</td>
<td>63% (53)</td>
</tr>
<tr>
<td>él</td>
<td>66% (443)</td>
<td>34% (227)</td>
</tr>
<tr>
<td>él (-specific)</td>
<td>82% (18)</td>
<td>18% (4)</td>
</tr>
<tr>
<td>ella</td>
<td>62% (326)</td>
<td>38% (203)</td>
</tr>
<tr>
<td>usted</td>
<td>50% (17)</td>
<td>50% (17)</td>
</tr>
<tr>
<td>uno</td>
<td>8% (7)</td>
<td>92% (80)</td>
</tr>
<tr>
<td>nosotros</td>
<td>85% (202)</td>
<td>15% (36)</td>
</tr>
<tr>
<td>nosotros (-specific)</td>
<td>80% (275)</td>
<td>20% (68)</td>
</tr>
<tr>
<td>ustedes</td>
<td>58% (7)</td>
<td>42% (5)</td>
</tr>
<tr>
<td>ellos</td>
<td>76% (75)</td>
<td>24% (24)</td>
</tr>
<tr>
<td>ellos (-specific)</td>
<td>95% (386)</td>
<td>5% (22)</td>
</tr>
<tr>
<td>ellas</td>
<td>58% (14)</td>
<td>42% (10)</td>
</tr>
<tr>
<td>Total</td>
<td>60% (2898)</td>
<td>40% (1902)</td>
</tr>
</tbody>
</table>

$p < 0.001$

Following I will discuss the results obtained for each social variable studied.

2.1. Age

Age was found to be a significant sociolinguistic factor in the selection of overt/null pronouns by PRS speakers ($p < 0.001$). In general, the resulting three age groups favored the use of null pronominals. However, speakers from group B (50+) and C (10-19) showed a 2:1 ratio of null/overt pronominal use (see Table 1). Thus, depending on the age of the speaker there was a higher or lower tendency to favor the use of one of these linguistic options.

Speakers were originally divided in 9 age groups: 5-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79 and 80-on. When tests for statistical independence were performed, this original classification was modified according to the results obtained. There was no significant difference among 4 of the first 5 age groups, namely, 5-9, 20-29, 30-39, 40-49 (Group A). The second age group was formed by the last 4 age groups, i.e., 50-59, 60-69, 70-79, 80-on (Group B). However, the 10-19 age group was significantly different to all of the other younger age groups; the speakers in the former showed a relatively high use of null pronominals when
compared to each of the latter ($p < 0.001$ for all groups). Nonetheless, when the 10-19 group was compared to the each of the age groups in group B, the difference was not significant. Regardless of the non-significance between speakers 10-19 years old and the second age group (50+), it was decided to keep the two separate since there are several possible reasons for the difference in behavior manifested by this group.

**Table 2. Distribution of Pronominal Use By Age Group.**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Null</th>
<th>Overt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Group A (5-9, 20-49)</td>
<td>57%</td>
<td>(1558)</td>
</tr>
<tr>
<td>Group B (50+)</td>
<td>63%</td>
<td>(879)</td>
</tr>
<tr>
<td>Group C (10-19)</td>
<td>67%</td>
<td>(461)</td>
</tr>
</tbody>
</table>

$p < 0.001$

The young adults in the corpus analyzed showed the highest rates of use of plural pronominals in the corpus. As observed in Table 1 and in a pilot study (see Avila-Jiménez, 1993), there is a clear distinction between singular and plural personal pronouns and the distribution of null/overt pronominals. Plural pronouns have shown a significantly low occurrence with null pronominals. Therefore, this group of speakers shows increased percentages in the use of null pronominals due to this high frequency of plural pronouns in their discourse. Speakers 10-19 years old used a 20% of the total of the plural pronominals found in the corpus. Furthermore, from the total of null pronominals obtained by this group, 43% were plural (199/461).

When the use of plural pronominals by this age group was cross tabulated with gender, no significant differences in the distribution of their use was found ($p < 0.25$). Thus, these high percentages cannot be explained in terms of gender differentiation. Furthermore, a test of independence was performed for the rate of null/overt use of plural pronominals by the different age groups with no significant differences found ($p < 0.25$). Therefore, all age groups showed similar rates of plural pronominal distribution between null and overt. These results seem to support our hypothesis that the overall high percentage of use of plural pronominals in the discourse of these speakers explain why this age group showed high rates for null pronominals.

Lantolf (personal communication) has suggested that the behavior of this group can be explained based on the influence of the school
environment on their speech. The 5-9 group patterns together with their parents generation since at this stage the influence of their parents is still strong, as they are beginning schooling. However, as children enter junior high and high school, the school becomes their most important social environment. For this reason, they might be using a higher percentage of null pronouns to separate themselves from other speakers. Unfortunately, this behavior cannot be further investigated due to lack of previous data on the speech of children to compare it with and also due to the lack of studies on the social networks of children and adolescents.

The effect of teenage groups and their differing linguistic behavior in the study of linguistic variation has been apparent in sociolinguistic studies (Labov, 1972a; Eckert, 1990; Lizardi, 1993). Eckert (1990) discusses findings on adolescent phonological variation which do not seem to conform to the generalized patterns established in sociolinguistic literature. Although the main purpose of her article is to point out the inadequacy of the characterization of male vs. female differences in phonological variation, she extends this inadequacy to age and social stratification. She argues that there are deeper and more complex factors at play within these social factors than a mere binary opposition or hierarchy of categories, i.e. male vs. female, upper vs. lower classes, and hierarchy of age groups without taking into account "effects of different life stages on people's relation to society and, hence, on language" (Eckert 1990: 247). In light of Eckert's arguments, an examination of the results obtained for adolescents in the current study suggests the need for future ethnographic studies of this group in order to better understand their linguistic and social behavior.

Comparisons of the results of the current study to those of previous studies, was only possible with Hochberg (1986a) and Morales (1986a).

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Null %</th>
<th>Null N</th>
<th>Overt %</th>
<th>Overt N</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-50</td>
<td>58%</td>
<td>3829</td>
<td>42%</td>
<td>2796</td>
</tr>
<tr>
<td>50+</td>
<td>72%</td>
<td>1595</td>
<td>28%</td>
<td>606</td>
</tr>
</tbody>
</table>

\[ p < 0.001 \]

3 In Morales' (1986b) age groupings, used in both Morales (1986a) and (1986b), are presented as 16-24, 24-50 and 50+. However, since there was no significant difference in the rate of use of pronouns between the first two age groups, \( p < 0.10 \), they have been collapsed into one group.
The present study and Morales (1986a) showed no significant differences between the age groups under 50. Furthermore, both studies showed significant differences between age groups under 50 and those over 50 ($p < 0.001$). PRS speakers 50+ in Morales’ corpus showed a higher use of null pronominals than those in our corpus. Available information dates the corpus used in Morales 1986a to 1982-83. My hypothesis is that the 10-11 years span between the two corpora reflect that older speakers are showing less use of null pronominals thus, showing a tendency towards the adoption of the new trend in pronominal expression in PRS, namely, overtness.

Hochberg (1986a) based her study in a corpus of 10 Puerto Rican women between the ages of 20-29 years living in Boston.

Table 4. Distribution of Pronominal Use in Hochberg (1986a).

<table>
<thead>
<tr>
<th></th>
<th>Null</th>
<th></th>
<th>Overt</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>58%</td>
<td>1729</td>
<td>42%</td>
<td>1257</td>
</tr>
</tbody>
</table>

When comparing Hochberg’s results in Table 4 to those of the 20-29 age group in this study (see Table 2), no significant difference between the two groups was found ($p < 0.25$). Thus, regardless of the fact that Hochberg’s speakers were only women and had been living in the United States for at least six months prior to the interviews, I found no significant difference when compared to the speakers interviewed for this study between 1992-1993. Furthermore, tests for independence showed that there was no significant difference between the rates observed when comparing Hochberg’s 20-29 age group and Morales’ 25-50 age group ($p < 0.25$) nor for the comparison of Hochberg’s 20-29 age group and group A in this study ($p < 0.25$). However, when tests for independence were performed between Hochberg (1986a) and the 50+ age groups in both Morales (1986a) and this study, the differences were significant ($p < 0.001$).

In all, results obtained for the independence tests among the different age groups seem to repeat a general cut-off point of 50 years in the behavior of PRS speakers for the use of null/overt pronominals.\(^4\) An

\(^4\) Lizardi (1993) found the same significant cut-off point at 50 years when studying the use of preverbal, postverbal, and null subjects in PRS interrogatives. All age groups favored preverbal and null subjects over post verbal subjects, but the generations under 50 years of age showed a higher percentage of use (90% for preverbal and null combined) when compared to speakers above 50 years (72% for preverbal and null
interesting remark is that for younger groups the differences among the three studies compared here were not significant, regardless of the possible and obvious differences in the corpora used for the studies. However, the differences between the 50+ age groups in Morales (1986a) and this study are significant. This evidence seems to support our hypothesis, namely, there is a change in progress taking place in PRS towards a generalized use of overt pronouns. As time progresses, older generations (50+) show an increase in the overall use of overt pronouns.

2.2. Style

Stylistic differences were shown to be significant in the selection of null/overt pronouns in our corpus ($p < 0.005$). Initially, the contexts in which pronouns occurred were classified as response, careful, speech to others, and narrative (for a detailed explanation see Labov, 1972b). Tests for independence for this corpus seem to corroborate linguistic observations of a style continuum based on the amount of attention paid to speech (Labov, 1972) with response and careful styles on the formal end of the continuum and with narrative and speech to others on the casual end.

<table>
<thead>
<tr>
<th>Style</th>
<th>Null %</th>
<th>N</th>
<th>Overt %</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Careful</td>
<td>61%</td>
<td>(2444)</td>
<td>39%</td>
<td>(1536)</td>
</tr>
<tr>
<td>Casual</td>
<td>55%</td>
<td>(454)</td>
<td>45%</td>
<td>(366)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In general, speakers in our corpus favored the use of null pronouns for both casual and careful style, however, the rates are higher for formal style. This was an expected result since a recurring phenomenon found in sociolinguistic research is that during a linguistic change in progress, the ‘new’ form exhibits higher rates in casual style whereas the ‘older’ form exhibits higher rates in careful style. In this case the ‘new’ form is the increase in use of overt pronouns (Labov, 1972a,b, 1981, 1991, 1994).

Similar results were reported by Morales (1986a). In her study, she divided the interviews in monologue and dialogue; dialogue being combined).
considered by her as closer to 'conversational reality'. If we are to translate this distinction in careful versus casual style terms, the results, shown in Table 6, yield very similar rates to those of this study (Table 5).

Table 6. Distribution of Pronominals by Stylistic Shift in Morales (1986a).

<table>
<thead>
<tr>
<th>Style</th>
<th>Null</th>
<th></th>
<th>Overt</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Careful</td>
<td>62%</td>
<td>(5489)</td>
<td>38%</td>
<td>(3400)</td>
</tr>
<tr>
<td>Casual</td>
<td>59%</td>
<td>(1946)</td>
<td>41%</td>
<td>(1338)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>p &lt; 0.025</td>
</tr>
</tbody>
</table>

Similarly to the current study, speakers in Morales' corpus favored the use of null pronominals. However, tests for independence showed that there was a significant difference for careful style between these two studies (p < 0.001). On the other hand, there was no significant difference between casual style between the two corpora under comparison (p < 0.05).

The comparison of these two studies suggests that over time there has not been a significant change in the use of pronominals for casual style. This means that in a period of ten years, pragmatic and syntactic distinctions between overt and null pronouns have remained constant for casual style. On the other hand, rates for careful style have significantly changed in those ten years, showing that as time elapses speakers are using less null pronouns in their formal speech. This suggests that in careful style, pragmatic and syntactic functions of overt and null pronouns have been changing. Therefore, it is necessary to further research how these functions are being affected by this syntactic change in progress.

2.3. Education

Another social factor that was found to be significantly correlated to the selection of overt/null pronominals in our corpus was the educational level of the speakers. Originally, there were 11 different educational categories represented by the speakers interviewed: no school, some elementary school, currently in elementary school, some high school, high school diploma, currently in high school, some college, currently in college, currently in technical college, college graduate and professional school. After tests of independence were performed, it was found that the original categories could be collapsed into two levels: Level 1, those with no education to those with high school education and Level 2, those with
higher education.

Table 7. Distribution of Pronominals Based on Educational Level.

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Null %</th>
<th>N</th>
<th>Overt %</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 (No school-High School)</td>
<td>63%</td>
<td>1486</td>
<td>37%</td>
<td>869</td>
</tr>
<tr>
<td>Level 2 (Higher Education)</td>
<td>58%</td>
<td>1412</td>
<td>42%</td>
<td>1033</td>
</tr>
</tbody>
</table>

\[ p < 0.001 \]

Coinciding with the results obtained for the other social variables examined, speakers of both educational levels favored the use of null pronominals. Level 1 speakers (no school to high school) showed a higher rate of null pronominal use than level 2 speakers. The ratio of use of null and overt pronominals is almost 2:1 for the speakers from level 1.

Unfortunately, due to the lack of information on educational level of PRS speakers in previous studies, it is impossible to establish whether PRS speakers in this study reflect a change in the use of null/overt pronominals in real time based on their education.

2.4. Occupation

Another significant correlation in our corpus was that of occupational level and the distribution of null/overt pronominals. Speakers were divided into the following categories: professional, managerial, clerical, skilled, unskilled, and unknown (Labov, 1991; Cameron, 1992).\(^5\) Results for tests of independence revealed that the occupational categories could be collapsed into two levels: Level A (professional and unknown) and Level B (managerial, clerical, skilled, and unskilled).

---

\(^5\) The 'unknown' group is formed by the 8 children (5-9 years of age) in the corpus for whom the information on the occupation of their father was not available.
Table 9. Distribution of Pronominals By Occupation.

<table>
<thead>
<tr>
<th>Occupational Level</th>
<th>Null %</th>
<th>Null N</th>
<th>Overt %</th>
<th>Overt N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level A (Professional, Unknown)</td>
<td>57%</td>
<td>(1189)</td>
<td>43%</td>
<td>(908)</td>
</tr>
<tr>
<td>Level B (Managerial, Clerical, Skilled, Unskilled)</td>
<td>63%</td>
<td>(1709)</td>
<td>37%</td>
<td>(994)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>p &lt; 0.001</td>
</tr>
</tbody>
</table>

All occupational levels favored the use of null pronominals. Speakers from occupational level A (professional and unknown categories) differ in that they favor more use of overt pronominals than occupational level B. The fact that the group 'unknown' patterned with the professional group can be explained based on their almost balanced (close to 50%) distribution of null/overt pronominals (54%/46% respectively). However, if we exclude this group from level A the results obtained show the same rates than when it was included. Thus, we can conclude that for occupational level, professionals seem to be more advanced in the use of the new syntactic pattern.

Unfortunately, due to the lack of previous treatment of this social variable in other studies, we could not compare results in the attempt to illustrate the direction of the null/overt pronominal change for this social factor in the past years.  

2.5. Non-significant social variables: Gender and Geographical Area.

Among the social variables that this study set out to investigate, gender and geographical area were not significant, i.e., speakers selection of null/overt pronominals is independent from the gender or geographical area to which the speaker belongs.

Results obtained for gender revealed that male and female speakers were close to the 60%-40% overall rate of null/overt pronominal use found in the corpus.

The fact that geographical area also resulted non-significant reveals a relatively homogeneous situation for null/overt pronominal distribution.

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6 The next stage in this research will be to conduct an Analysis of Variance (ANOVA) in order to test for interaction among these significant social factors.
among PRS speakers.

3.0. Linguistic Change?: Pronominal Use in Puerto Rican Spanish

This section will examine whether there is a true change in progress occurring in PRS and if there is, how can that change be characterized.

Labov (1966, 1981, forthcoming) emphasizes the importance of observing a language at least in two separate stages in time (the distance of such observations being between a minimum of a half generation to a maximum of two generations) in order to report evidence of a change in progress. There are two main approaches to study such variation in a language. One such approach is a study in real time which can either examine the speech of the same individuals in two different time periods (panel study) or a random sample of speakers in a community at two different points in time (trend study). The other approach is a study of apparent time, the synchronic distribution of a linguistic variable among different age groups in a community (thus, a trend study can be also defined as two studies of apparent time of the same community). In the event that a study of apparent time reflects a correlation between age and the dependent variable, the linguist then has to investigate whether this represents a true change in progress or a sample of age grading, i.e., "a regular change of linguistic behavior with age that repeats in each generation" (Labov, forthcoming). In order to determine this, previous studies have to be reviewed and compared to the results in apparent time.

In distinguishing between age grading and true change in progress, it is also important to include a representation of both young and old speakers in the community. This assists in observing whether the linguistic behavior of the youngest and/or oldest generation repeats in each generation or if there has been some overall change in behavior with respect to the linguistic variable being studied (see Labov, 1963, 1966).

As observed throughout this paper, this study has drawn comparisons with those previous studies on pronominal overtness in PRS, namely, Hochberg (1986a,b) and Morales (1986a). Unfortunately, there is no evidence of early studies on pronominal overtness in PRS. The early work of Tomás Navarro (1948), which studies the speech of PRS speakers based on a survey conducted in 1928, does not specifically mention the increase in use of pronouns in the dialect nor does Manuel Alvarez Nazario (1972, 1982, 1992) in his various treatises on the origins of the Spanish spoken in Puerto Rico. Nevertheless, Navarro (1948) reports increasing preverbal (and obviously overt) use of pronouns tú, usted, ustedes in pronominal questions and yo and nosotros in dependent questions in 1928. At the time, third person singular and plural pronouns did not seem to undergo such preverbal positioning. Furthermore, he noticed the use of
preverbal pronominals with infinitives. This might be taken as an indication that pronominal overtness was already an existing and noticeable fact in 1928, at least as occurring in preverbal position both in questions and with infinitives. Nevertheless, since there is not enough information available, for the purpose of this paper, the studies of Morales and Hochberg are the oldest ones we have for comparison.

In section 2.1, a comparison between the results for age reported by Morales (1986a) and this study was presented. From this comparison some relevant observations emerged: 1) for both studies the cut-off point of 50 years seems to hold true, 2) the generations under 50 years showed similar distribution of null/overt pronominals (the former variable being favored) with higher use of overt pronominals than the generation over 50 years, 3) the generations over 50 years showed a significantly higher use of null pronominals, 4) the 50+ generation in this study showed a significantly lower use of null pronominals than the 50+ generation in Morales’s study.

Observation 4 seems to point at a true change in progress for the 50+ age group. The younger generations over a span of ten years have not altered their null/overt pronominal distribution, staying relatively close to a 50% distribution of these forms. Meanwhile, the older generations have moved towards a closer to the rates shown by younger PRS speakers.

The observation of a cut-off point of 50 years and the increase in use of null pronominals shown by speakers 50+, in both the current study and Morales (1986a), can be considered as a proof for age grading. It is possible that as speakers go beyond 50 years of age, a characteristic of these age groups is to use a higher rate of null pronominals. Nevertheless, this use still reflects change in progress given the observation of a significantly increase in overt pronominal use among the speakers interviewed for this study as opposed to those in Morales (1986a).

Even in the case that this study reflects both change in progress and age grading, Labov (1994: 97) has stated that:

"[finding both processes together] suggests that we may have been setting up a misleading opposition between age grading and generational change...It is possible that age grading is involved in the mechanism of real-time change for certain types of linguistic change".

Labov's observation is a result of findings by Cedergrens' re-study of Panama City in 1983. In this re-study, one of her goals was to offer real time data to elucidate whether lenition of 'ch' in Panama City (one of the five main variables studied by her between 1969-71 in her doctoral dissertation) was a change in progress. It was observed that the results
obtained in 1983 were closer to those of 1969 for the each generational group. This pointed at age grading. Thus, even though there was a 13 years difference between the two studies, speakers showed similar rates of ch lenition for each generation. However, except for the two youngest age groups, the 1983 values were consistently 10-15% higher than those obtained in 1969. Thus, Labov concluded that even though age grading was the dominant configuration, there was a steady increase in lenition which reflected change in real time.

Perhaps in PRS age grading is the dominant configuration since null subjects are still favored among all age groups, specially by older speakers. Nevertheless, change in progress is evident, though probably subordinated to age grading, in the increased use of overt pronouns revealed by the younger age groups and the 50+ age group in this study based on a comparison with Morales (1986a). However, further research on PRS is necessary in order to validate or refute this observation.

4.0. Further Characterization of a Linguistic Change: Level of Awareness and Stage of the Change.

Labov (1966, 1972, 1981, 1991, forthcoming) proposes several other criteria for a typology of a linguistic change in progress. These criteria are based on the level of social awareness during the different stages of the change and the stage of the change at the moment of study.

The first typological criterion, namely, level of social awareness is concerned with determining whether the change is from above or below. This distinction is based not only on the social awareness of the so mentioned change but also on the position in the socioeconomic hierarchy of the groups introducing the change. Changes from above are introduced by the dominant social classes, usually carry high levels of social consciousness, show higher rates for formal styles, and are often subject to hypercorrection (Labov 1966, 1981, 1991, forthcoming). Furthermore, changes from above are more likely to create a stereotype of those forms that are being substituted by the new, prestigious form. A well-known example of such change is Labov (1966) study of the adoption of the r-pronouncing norm in New York City.

Changes from below, on the other hand, are introduced by any social class and usually occur, from its beginning to its nearly completion, below the level of social awareness. Labov (1991: 215) states that change from below "is the basic form of linguistic change that operates within the system". Labov (1991, forthcoming) offer as examples of change from below the Philadelphia vowel change, and Cedergren's (1973) study of 'ch' lenition in Panama City.

Pronominal overtness in PRS can be characterized as a change from
below since overt social consciousness of this process has not been 
attested among PRS speakers. Further evidence for classifying 
pronominal overtness as a change from below comes from the fact that 
this is an internal change (see Labov's definition above). Spanish, as it is 
well known, has the option of expressing subject pronouns either overtly 
or covertly. Several studies have dealt with general conditions operating 
internally to determine when do speakers select an overt or null pronoun 
in General Spanish (Lamíquiz, 1967; Tapia López, 1964, 1968). Other 
studies of dialects of Spanish have isolated general concepts such as switch 
reference and change of topic as key factors in determining when a 
pronominal will be overt (Rosengren, 1974; Bentivoglio, 1980; Silva-
Corvalán, 1982; Enríquez, 1984; Montes-Miró, 1986; Avila-Jiménez, 1992;
Cameron, 1992; Lizardi, 1993). In these studies, it has been observed that 
most of these constraints operate across dialects of Spanish. However, 
Caribbean Spanish seems to have other constraints operating internally 
that allows for overt pronominals to be used more often thus, differing 
from the norm in General Spanish.

As for the stage of this change in PRS, evidence points at a stable 
situation. Results of comparisons with previous studies showed that there 
has not been significant changes in the overall rates of pronominal 
overtness among the youngest generations of PRS speakers, namely, 
those under 50 years of age. Thus, a stable situation has been the norm for 
these generations for at least for the past decade. Furthermore, the fact 
that there has been a significant increase in the use of overt pronominals 
among the generations above 50 years, does not exclude these groups 
from showing stability in the process. The increase reflected by these 
groups has been gradual, not sharp and fast as it might be expected in 
new or vigorous changes.

In all, the stability of this change, i.e., the fact that PRS have not 
completely changed to use of mainly overt pronouns, can also be 
attributed to the fact that the selection of a null or overt pronoun in 
Spanish conveys crucial discourse-pragmatic information. If this were a 
vigorous change, these distinctions could be lost and speakers would have 
come up with new syntactic devices to express these different functions.

5.0. Stability of Speakers' Linguistic Structures: The Hypothesis on 
the Permeability of Syntactic Structures

Labov (1981) postulated that there is a difference in the stability of 
speakers' linguistic structures. In studies of sound change in progress, it 
has been observed that “the individual acquires a certain [phonological] 
system in the early years of language development, and keeps that 
system more or less intact throughout the rest of his or her life” (180).
Thus, adult phonological systems are fixed and would hardly be permeated by new phonological trends. This explains why in studies of phonological variation, adults show significantly less use of the new forms while younger generations show higher rates. This is not to say that adults do not use the incoming forms, but usually the "examples occur just where the children or the grandchildren of the speaker concentrate most of their pronunciations of the same word class" Labov (1981: 181).

However, in studies of syntactic changes in progress it has been observed that both adult and children show relatively high rates of use of incoming forms. The results, in many instances, show a flat age distribution. Thus, Labov attributes the difficulty to find syntactic change in progress to these distributions. He observes that syntactic patterns in adults seem to be mobile or permeable, i.e., syntactic changes can alter the linguistic patterns of adults. This movibility is also known as the Hypothesis on the Permeability of Syntactic Structures. It suggests that syntactic patterns, contrary to phonological patterns, are not fixed in speakers as youngsters thus, subject to change as new forms come into the language.

In order to discover syntactic changes in progress it is therefore important to use both studies in real and apparent time to find and understand such changes. These studies allow for comparisons between the behavior of the youngest and oldest groups in a speech community at different points in time. These comparisons in turn, will show whether there has been an increase over time in the use of a particular linguistic form by both groups.

Lizardi (1993: 102) observes that there is a co-existence of flat and gradient age distributions in syntactic changes which might also be due to, among others, the fact that:

"...some syntactic variables are less susceptible to becoming the target of social differentiation because they are more discourse/ pragmatically dependent (Silva-Corrlán, 1989). In my opinion, such is the case for the rules controlling subject overtense and positioning in null subject languages."

Results obtained for age in this study (see section 2.1) and those Morales (1986a) revealed both flat and gradient age distributions for this syntactic change. Flat age distributions were observed in the patterning of speakers 20-49 years old and 50-80+ years old for the current study and the patterning of speakers 5-49 years and 50+ years for Morales (1986a). These significant groupings support the hypothesis of the permeability of syntactic structures; there was no distinction among the different ages represented in the two age groups in each study. Age gradience was
observed in the 50 years cut-off point revealed by both, the current study and Morales (1986a).

However, contrary to Lizardi’s observation, even though results for a pilot study (Avila-Jiménez, 1993) pointed to the significance of discourse-pragmatic conditions on the use of null/overt pronominals in PRS, the results of the current study have also shown social differentiation among speakers of PRS in the use of these linguistic forms.

As Silva-Corvalán (1989) points out, non-phonological variation needs to be further explored in order to better understand the type of variation not only in its nature, but also based on the factors, internal and external, that condition it.

6.0. Conclusions

The results obtained for this larger scale study have shown, contrary to findings of previous studies of the phenomenon, that age, style, education, and occupation correlated with the selection of null/overt pronominals among the PRS speakers interviewed. Overall it was observed that null pronominals showed higher rates of use in our corpus. However, speakers who were under 50 years of age, college educated, professional employees and casual style showed higher rates of overt pronominal use.

The existence of previous studies in apparent time allowed for a comparison in real time. This comparison revealed that the increase in use of overt pronominals in PRS is a true change in progress. Based on Morales (1986a), it was observed that in a decade, speakers over 50 years of age showed an increase in the rate of use of this syntactic variable. Equally important was the finding that this comparison disclosed: pronominal overtness showed both an age grading configuration and age differentiation. This offers further support to Labov’s (1994) hypothesis that both configurations can appear in the study of a linguistic variable without implying that there is no change in progress.

The stability of this change in PRS was observed in the significantly similar behavior of the 20-49 age group for this study. Nonetheless, it was acknowledged that further study of younger and older generations is required in order to assess: 1. the difference in behavior found for the 10-19 age group, 2. the influence of the school environment in the speech of both young and old speakers, 3. the influence of social networks in the use of linguistic variables, especially for younger speakers.

Throughout the discussion of the correlation of social variables and syntactic change in this chapter, it was observed that some recurring phenomena and principles in sociolinguistic research were present in the study of pronominal overtness. The principle of stylistic differentiation
was observed to apply in our corpus. Thus, casual style revealed higher rates of use of the new, non-standard variable than careful style. The phenomenon of adolescent speakers showing a differing behavior from that of the rest of the population was also evident in our study. However, the principle of sex differentiation, by which women under stable linguistic conditions show a significantly lower use of the non-standard form and men show a higher use of such forms, was not noticed in our corpus.

Evidence for the hypothesis of the permeability of syntactic structures was also provided in this paper. It was observed that there was no significant reason to separate the 20-49 age group in this study thus, adults (younger than 50 years) showed same rates of overt pronominal use as younger groups (with the already mentioned exception of the 10-19 age group). Furthermore, even though there was a significantly decrease in use of overt pronominals among speakers 50+, they still showed a similar use of the syntactic variable among them.

Finally, the next step in this research will be the study of correlation of these social variables and pronominal overtness in PRS in the context of syntactic and discourse-pragmatic conditionings on the use of null/overt pronominals. This will allow a better understanding of how this change is affecting such conditionings.
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Sluicing without Wh-Movement*

Kunio Nishiyama
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0. Introduction

Sluicing is a phenomenon exemplified in (1a-c) in English (cf. Ross 1969) and (1d) in Japanese (cf. Takahashi 1993):

(1) a. They say John loves someone, but I don’t know who (he loves).
   b. They say John will go there, but I don’t know whether *(he will go).
   c. They say John loves Mary, but I don’t know that *(he loves her).

   (that as a Comp)

   d. Minna-wa [John -ga dareka-o aisiteiru to]
     everyone-Top -Nom someone-Acc love Comp
     itta ga, boku-wa [dare-o (kare-ga
     said but I-Top who-Acc he-Nom
     aisiteiru) ka] wakaranai
     love Q know-not
     ‘Everyone said John loves someone, but I don’t know who (he loves).’

Sluicing is licensed with Wh-phrases, as in (1a and d). But whether or the complementizer that does not license Sluicing, as in (1b and c). The Japanese equivalents to (1b and c) are also bad, as observed by Takahashi (1993).

Lobeck (1990) and Saito and Murasugi (1990) claim that the empty IP is licensed by an agreeing head. The argument goes as follows: Who in Spec CP agrees with C regarding Wh-feature in (2a), but there is no element in Spec CP in (2b). Hence the head does not agree and cannot license the

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empty IP.

(2)  

<table>
<thead>
<tr>
<th></th>
<th>a.</th>
<th>b.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

Takahashi (1993, 1994) adopts this analysis and claims that this shows that there is a syntactic Wh-movement in Japanese. In this paper I claim that Sluicing in general involves a covert copula, and that the Wh-phrase stays in situ in Japanese Sluicing.

1. No Spec-head Agreement

In this section I argue that the hypothesis that Sluicing is licensed by an agreeing Comp cannot be correct both in English and Japanese.

First of all, as is well known, whether induces Wh-island effects as shown in (3):

(3)  *How do you wonder whether John fixed the car?

This shows that Spec CP is occupied either by whether (cf. Kayne 1989: 252) or by a null operator. In either case, there is something in Spec CP and this element should agree with C head. But then there is no account for the ungrammaticality of (1b). That is, since the Comp in (1b) is agreeing, (1b) should be good, contrary to fact.

Next consider the following:

(4)  

<table>
<thead>
<tr>
<th></th>
<th>a.</th>
<th>b.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*Irv and someone were dancing together, but I don’t know who Iv and were dancing together.</td>
<td>??Irv and someone were dancing together, but I don’t know who.</td>
</tr>
</tbody>
</table>

(Ross 1969)

(5)  

<table>
<thead>
<tr>
<th></th>
<th>a.</th>
<th>b.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>They asked where we bought one of our cars, but I don’t remember which one.</td>
<td>*I don’t remember which one they asked where we bought.</td>
</tr>
</tbody>
</table>

(Levin 1982)
(4a) and (5b) show that embedded questions obey the Coordinate Structure Constraint and the Wh-island Constraint. If Sluicing is derived from embedded questions by Wh-movement followed by IP deletion, it is not clear why there is a contrast like that in (4) and (5).

Takahashi claims that Japanese allows Sluicing as in (1d), repeated below:

(1) d. Minna-wa [John -ga dare-o aisiteiru to] everyone-TOP -NOM someone-ACC love COMP

itta ga, boku-wa [dare-o (kare-ga said but I-TOP who-ACC he-NOM

aisiteiru) ka] wakaranai

love Q know-not

‘Everyone said John loves someone, but I don’t know who (he

loves).’

(Takahashi’s 47a)

Takahashi argues that the Wh-phrase occupies Spec CP and agrees with Comp ka, which licenses the empty IP. However, for some verbs, ka can co-occur with to, a canonical complementizer in Japanese. This is shown in (6a):

(6) a. Boku-wa dare-ga kita ka to kiita.

I-TOP who-NOM came Q Comp asked

‘I asked who came.’

b. Boku-wa John -ga dare-o aisiteiru ka wakaranakatta

I-TOP -NOM who-ACC love Q didn’t know

kara, dare ka to kiita.

since who Q Comp asked

‘Since I didn’t know who John loves, I asked who.’

If ka is in Comp, it is not clear why to can appear. Though it is not clear where ka is, (6a) suggests that it may not be in Comp. Indeed, as (6b) shows, this ka to pattern allows Sluicing. If there is only one CP projection in the embedded sentence in the second sentence of (6b) and its head is occupied by to, the licensing of the Wh-phrase by ka is not necessarily by Spec-head relation.¹

¹ This argument might not hold if the verb selects iterated CPs, as Suñer (1991) argues.
2. Covert Copula

This section provides an alternative analysis of Sluicing. The basic paradigm in (1), repeated below as (7), seems to correlate with the contrast in (8):

(7) a. They say John loves someone, but I don’t know who.
    b. *They say John will go there, but I don’t know whether.

(8) a. They say John loves someone, but I don’t know who it is.
    b. *They say John will go there, I don’t know whether it is.

Suppose there is a covert copula after the Wh-phrase in Sluicing. Then the ungrammaticality of (7b) can be easily explained, for whether does not allow copula, as shown in (8b).\(^2\)

This hypothesis is supported by Japanese. Japanese Sluicing can include the copula da after the Wh-phrase as in (9):

(9) Minna-wa [John -ga dareka-o aisiteiru to] itta
everyone-TOP -Nom someone-Acc love Comp said
ga, boku-wa dare-o (da) ka wakaranai
but I-TOP who-Acc Cop Q know-not
‘Everyone said John loves someone, but I don’t know who (it is).’

But the copula is not allowed in normal embedded questions as in (10):

(10) boku-wa dare-o [IP John -ga aisiteiru] (*da) ka wakaranai
    I-TOP who-Acc -Nom love Cop Q know-not
    ‘I don’t know who John loves.’

If (9) is derived by IP deletion from (10), the copula should not be allowed, which is not the case. The grammaticality of (9) supports the hypothesis that all so-called Sluicing examples actually involve copula drop.

One might claim that (9) is structurally ambiguous, and when there is no copula, it involves IP deletion. However, this alternative cannot be correct.

\(^2\) Luis Lopez (p.c.) points out that the following is good in Spanish:

(i) ...pero no sé si está
    ...but not I-know if is

However, as Magui Suñer (p.c.) points out, the empty pronoun here is “s/he”, so (i) is not equivalent to (8b).
First, in Korean, unlike Japanese, copula drop before a Q-marker does not occur. Now (11) shows that in the Korean equivalent of Japanese (9), the copula is obligatory:

    everyone-Top    -Nom someone-Acc  love-Ind-Comp
    malha-ciman na-nun [nwukwu-lul *(i-n)-ci]
    say-but    I-Top who-Acc    be-Pres-Q
    molu-n-ta
don’t know-Pres-Ind
‘Everyone said John loves someone, but I don’t know who (it) is.’

This strongly suggests that there is always a copula (covert or overt) in Japanese Sluicing as well.

Furthermore, as observed by Jorden and Noda (1988), the Japanese copula is almost obligatory with the past morpheme *datta*, just like in Korean. (This may be because while the copula is semantically vacuous, the past morpheme has some semantic content.) This is shown in (12):

(12) a. John -ga rainen nihon-ni kuru ga,
    -Nom next.year Japan-to come but,
    boku-wa itu (da) ka wakaranai
    I-Top when (Cop) Q know-not
    ‘John is coming to Japan next year, but I don’t know when (it is).’

    b. John -ga kyonen nihon-ni kita ga,
    -Nom last.year Japan-to came but,
    boku-wa itu ??(datta) ka wasureta
    I-Top when (Cop-Past) Q forgot
    ‘John came to Japan last year, but I forgot when (it was).’

3 Chinese exhibits the same pattern as Korean, as Audrey Li (p.c.) pointed out:

(i) meige ren dou shuo Zangsan ai-shang le shenme ren
each person all say Zangsan love-up PFT what man
le, keshi meiren zhidao *(shi) shei.
PFT but no one know is who
‘Everyone said that Zangsan fell in love with someone, but no one knew who (it) was.’
However, like *da in (10), *datta is not allowed in embedded questions, as shown in (13):

\[(13) \quad \text{boku-wa itu [IP John -ga nihon-ni kita] I-Top when -Nom Japan-to came} \]
\[
(*\text{datta}) \quad \text{ka wasureta} \quad \text{Cop-Past Q forgot} \quad \text{‘I forgot when John came to Japan.’} \]

This contrastive behavior of *datta in (12b) and (13) shows that (12b) and (13) are structurally independent.

One might still claim that even if there is a copula, the initial Wh-phrase is in Spec CP. However, consider (14):

\[(14) \quad \text{boku-wa [(sore-ga) itu (da) ka] wakaranai I-Top it-Nom when Cop Q know-no} \quad \text{‘I don’t know when (it is)’} \]

Though the subjects in (12) are null, (14) has an overt subject. Since the Wh-phrase comes after the subject, (14) shows that if the pronominal subject is overt, the Wh-phrase is in situ. Note that there is no way to scramble the Wh-phrase in (14), as shown in (15):

\[(15) \quad *\text{boku wa itu; sore ga t; da ka wakaranai} \]

If we assume that overt subjects and null subjects are in the same position, the Wh-phrase in Sluicing is in situ as well, not in Spec CP. This indicates that, if our copula analysis is correct, there is no Wh-movement or even Scrambling in Japanese Sluicing.\(^4\) Note also that the subject and the copula in (16) are discontinuous and do not form a constituent. If this is the fixed order for a Sluicing with null subject, the derivation cannot be by IP deletion, because the subject and the copula do not form a constituent in (14).\(^5\)

Takahashi (1994) actually considers the copula analysis of Sluicing, but rejects it. This is due to the following contrast in interpretation:

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\(^4\) The Chinese data in note 3 also suggest that there is no Wh-movement in Chinese Sluicing, because the Wh-word follows the copula there.

\(^5\) In English Sluicing, the Wh-phrase comes before the subject, and the subject and the copula are adjacent and seem to form a constituent. Therefore, the Wh-phrase may be in Spec CP and there is an IP deletion of \textit{it is}.\n
(16)  John -wa [zibun-ga naze sikerareta ka] wakanai ga,...'
     -Top self-Nom why was.scold Q know-not but...
     'John doesn't know why he was scolded, but...

     a. Mary -wa naze ka wakatteiru
        -Top why Q knows
        'Mary knows why.'

     b. Mary -wa sore-ga naze (da) ka wakatteiru
        -Top it-Nom why Cop Q knows
        'Mary knows why it is.'

     c. Mary -wa naze da ka wakatteiru
        -Top why Cop Q knows
        'Mary knows why (it) is.'

(adapted from Takahashi)

(16a) allows sloppy identity: it means either that Mary knows why John
was scolded, or that Mary knows why Mary was scolded. However, (16b)
has only the former reading and sloppy identity is impossible. From this
contrast, Takahashi concludes that Sluicing is different from copula drop.

However, (16b) is tricky: it uses an overt pronoun. Indeed, Takahashi
(in note 3) acknowledges that if the subject is covert as in (16c), the copula
sentence does have sloppy identity.\(^6\) He states that "...the difference

\(^6\) Takahashi claims that there is still a contrast in the following:

(i) UConn -wa [sono basketball.team -ga dare-o
        -Top its
        scout sita ka] happyoosita.
        -Nom who-Acc
        did Q announced
        'UConn announced who its basketball team scouted.'

     a. Duke-mo dare-o ka happyoosita
        also who-Acc Q announced
        'Duke announced who, too.'

     b. Duke-mo dare-o da ka happyoosita
        also who-Acc Cop Q announced
        'Duke announced who (it) is, too.'

He claims that while (ia) allows sloppy identity, (ib) does not. I disagree
with this judgement and see no difference between (ia) and (ib). One of
my informants even says that sloppy identity is strongly preferred for (ib)
as well for a pragmatic reason: it is unlikely that Duke announces who
UConn scouted.
between the overt pronoun and the empty one is just whether the phonetic matrix is specified or not.” Nevertheless, it is independently observed that there is a semantic difference between them: covert pronouns can be indefinite but overt pronouns must be definite. Consider the following:

(17) a. John -wa omosiroi ronbun-o yon-de,
    -Top interesting paper-Acc read-and

    Mary -mo sore-o yomu.
    -also it-Acc read

    ‘John reads an interesting paper and Mary reads it, too’

b. John -wa omosiroi ronbun-o yon-de,
    -Top interesting paper-Acc read-and

    Mary -mo pro yomu.
    -also read

    ‘John reads an interesting paper and Mary reads one, too’
    (cf. Kim 1994)

Note that (17b) allows the reading where Mary reads an interesting paper but not necessarily the one that John reads. But (17a) means only that Mary reads the same paper as John does. That is, overt pronouns are definite. Therefore, the difference between (16a) and (16b) should not be attributed to the existence of copula, but to the semantic difference between overt and covert pronouns.

3. Constraints on Overt Case-markers

So far we have been suggesting that Sluicing is a covert copular structure. In this section we note that constraints on overt Case-markers in Sluicing are parallel to those in Clefts. Since Clefts are copular sentences, this supports our claim that so-called Sluicing involves copula deletion.\(^7\)

(18) John -ga sita no wa tennis da
    -Nom played NO Top Cop

    ‘What John played was tennis.’

Here no behaves like English what. However, unlike what, no can be used

\(^7\) Judgments on these constructions vary considerably among speakers. The judgments from (18) through (23) are the author’s, and different from, say, Takahashi (1993).
as a person, as shown in (19):

(19)  a. John -ga aisiteiru no wa Mary -(¢o) da
      -Nom love NO Top -Acc Cop
      ‘It is Mary that John loves.’
      lit.: ‘Who John loves is Mary.’

     b. Mary -o aisiteiru no wa John -(¢ga) da
        -Acc love NO Top -Nom Cop
        ‘It is John that loves Mary’

     c. John -ga atta no wa Mary -(¢ni) da
        -Nom met NO Top -Dat Cop
        ‘It was Mary that John met.’

We assume here that Accusatives and Nominatives are structural Case-markers, but Datives are inherent Case-markers. (19a and b) show that Accusative and Nominative Case-markers cannot appear in the focus position, but (19c) shows that the Dative Case-marker can do so marginally. The inherent Case status of the Dative in (19c) is shown by its lack of recoverability, as illustrated in (20):

(20) a. pro Mary -(¢) aisiteiru
       -Acc love
       ‘(He) loves Mary’

     b. pro Mary -(¢ni) atta
        -Dat met
        ‘(He) met Mary.’

(20a) shows that deleted structural Case can be recovered in interpretations, but this is not the case for an inherent case-marker as in (20b).

No can also be used as a locative, and in this case, lexical postpositions are optional in the focus position, as shown in (21):

(21) John -ga Mary -ni atta no wa Ithaca -(de) da
     -Nom -Dat met NO Top -in Cop
     ‘It is *(in) Ithaca that John met Mary.’

Finally, no more than one element can appear in the focus position as in (22):
(22) *John -ga okutta no wa present -o Mary -ni da
    -Nom sent NO Top -Acc -Dat Cop
*‘It is a present to Mary that John sent.’

Now these constraints hold exactly the same in Sluicing:

(23) a. Minna-wa [John -ga dareka-o aisiteiru to]
everyone-Top -Nom someone-Acc love Comp
    itta ga, boku-wa dare -(*o) (da) ka wakaranai
    said but I-Top who -Acc Cop Q know-not (cf. 19a)
    ‘Everyone said John loves someone, but I don’t know who (it)
    is.’

b. Minna-wa [dareka-ga Mary -o aisiteiru to]
everyone-Top someone-Nom -Acc love Comp
    itta ga, boku-wa dare -(ga) (da) ka wakaranai
    said but I-Top who -Nom Cop Q know-not (cf. 19b)
    ‘Everyone said someone loves Mary, but I don’t know who
    (it) is.’

c. Minna-wa [John -ga dareka-ni atta to]
everyone-Top -Nom someone-Dat met Comp
    itta ga, boku-wa [dare -(?ni) (da) ka] wakaranai
    said but I-Top who -Dat Cop Q know-not (cf. 19c)
    ‘Everyone said John met someone, but I don’t know who (it)
    is.’

d. Minna-wa [John -ga Mary -ni dokoka-de
everyone-Top -Nom -Dat somewhere-in
    atta to] iwu ga boku-wa doko -(de) (da) ka
    met Comp say but I-Top where -in Cop Q
    wakaranai
    know-not (cf. 21)
    ‘Everyone says John met Mary somewhere, but I don’t know
    where (it) is.’
e. *Minna-wa [John -ga dareka-ni nanika-o
   everyone-Top -Nom someone-Dat something-Acc
   okutta to] iwu ga boku-wa [dare-ni nani-o ka]
   sent Comp say but I-Top who-Dat what-Acc Q
   wakaranai
   know-not
   *(cf. 22)
   ‘Everyone says John sent something to someone, but I don’t
   know what to whom (it) is.’

(23a and b) show that structural case-markers are impossible, as in (19a
and b). (23c) shows that the inherent case-marker is marginal as in (19c).
(23d) shows lexical postposition is possible as in (21), and (23e) shows that
no more than one element can appear, as in (22). This parallelism confirms
our claim that Sluicing is a covert copula structure.\(^8\)

4. Conclusion

In this paper I have argued that Sluicing in general involves a covert
copula. In particular in Japanese, it involves no Wh-movement or
Scrambling. Sluicing is used crucially as evidence for Takahashi’s (1993)
claim that scope-fixing long-distance Wh-scrambling is to Spec CP. If
Japanese Sluicing is a covert copula sentence and involves no Wh-
movement, it opens the possibility for IP adjunction. Indeed, Nishiyama,
Whitman and Yi (forthcoming) show that sometimes this kind of
scrambling is an adjunction to IP.

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\(^8\) The point of this section has been that there is a parallelism between
Sluicing and Cleft and I am not claiming that Sluicing \textit{is} Cleft. Most
obviously, Sluicing does not obey Subjacency but Cleft does:

(i) Boku-wa [John -ga nanika-o katta toi] uwasa-o
   I-Top -Nom something-Acc bought that rumor-Acc
   kiita ga, nani ka wakaranai
   heard but what Q know-not
   ‘I heard a rumor that John bought something, but I don’t know
   what.’

(ii) *Boku-ga [John -ga katta toi] uwasa] -o
   I-Nom -Nom bought that rumor -Acc
   sinziteiru no wa kono hon da
   believe NO Top this book Cop
   ‘It is this book that I believe the rumor that John bought.’
References


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On Predicate-chains and Binding of DP-contained pronouns

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1. Introduction

This paper addresses the issue of locality in binding and proposes an explanation for the coreference possibilities of pronouns in DP contexts like the following, where only in the a-examples can the DP-contained pronoun corefer with the clausal subject:

(1)  a. The children$_i$ heard stories about them$_i$.
    b. *The children$_i$ told stories about them$_i$.

(2)  a. The children$_i$ found pictures of them$_i$.
    b. *The children$_i$ took pictures of them$_i$.

(3)  a. John$_i$ read a report about him$_i$.
    b. *John$_i$ wrote a report about him$_i$.

(4)  a. The doctor$_i$ supervised an operation on him$_i$.
    b. *The doctor$_i$ performed an operation on him$_i$.

The pair in (1) was presented by Chomsky (1986) to challenge proposals to redefine the binding domain in different terms for anaphors and pronouns (as in Huang, 1983). These proposals were motivated by examples like those in (1a) and (2a) where both pronouns and anaphors can corefer with the clausal subject:

(5)  a. The children$_i$ heard stories about each other$_i$/them$_i$. (=1a)
    b. The children$_i$ found pictures of each other$_i$/ them$_i$. (=2a)

Lack of complementarity between anaphors and pronouns in the a-examples is unexpected given Conditions A and B and the definition for binding domain in the standard Binding Theory (BT) (Chomsky, 1981,

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1986). However, the hear/tell contrast in (1) shows that non-complementarity is only found with hear; with tell the pronoun cannot corefer with the matrix subject.

The contrast in coreference possibilities of pronouns points to a structural difference between the a- and b-examples in (1) through (4) which is not immediately apparent. However, inference of 'agentivity' of N in examples like (2b) has been acknowledged in Jackendoff (1974), Chomsky (1986) and Williams (1987):

(6)  
   a. The children (AG)i took [(AG)i pictures of John (TH)]  
   b. The doctor (AG)i performed [an (AG)i operation on Harry (TH)]

Proposals in terms of 'control' have been presented to account for the fact that, in these examples, an implicit argument in DP is understood to be 'controlled' by the main clause agent subject.

The main objective of this paper is to explain the structural difference between the a- and b-examples and capture Chomsky's insight on how hear-type verbs and tell-type verbs differ: "an explanation is suggested by the fact that in [(1b): tell], we assume that the stories are 'theirs', while in [(1a): hear], we assume them to be someone else's." (Chomsky, 1986: 167). By explaining the hear/tell contrast (which does not represent an isolated phenomenon but a general one, as will be made clear in the paper), we will also (i) derive the 'control' facts in (6), and (ii) account for the coreference possibilities of DP-contained pronouns in (1) through (4).

In this paper, we focus on the coreference possibilities of the pronoun, since it is here where the contrast between the a- and b-examples is found. Explaining correferrence of anaphors is out of the scope of this paper; however, our conclusions with respect to the minimal binding domain for hear-type verbs and tell-type verbs, make predictions on whether it is coreference of an anaphor in the a-examples or coreference of an anaphor in the b-examples that is not captured by Condition A of the BT.

I will hypothesize that the difference between hear-type verbs (a-verbs: read, find, see, supervise, etc.) and tell-type verbs (b-verbs: write, perform, make, create, do, take-picture, etc.) lies in the structure of the embedded DP and not at the level of CP. In particular, the head N in DP projects argument structure only in the case of hear-type verbs; in the case of tell-type verbs, N can only take adjunct-like modifiers (as in Anderson, 1984). I claim that the relevant difference between hear-type verbs and tell-type verbs involves 'aspectual' properties of the verb, event structure and the possibility that N project an external argument in DP. Evidence for the structural difference in DP comes from agent by-phrases and 'possessivization'.
This paper assumes the theory for Argument Structure (A-structure) in Grimshaw (1990). In this theory, lexico-semantic properties of a predicate, thematic and aspectual, interact at a lexico conceptual structure (Lcs) to determine the predicate's A-structure in the syntax.

The proposal is presented in terms of 'complex predicate constructions' and 'Predicate-chains'. I propose that the explanation for the hear/tell contrast lies in predicate interaction between the verbal and nominal heads at the Lcs level, as determined by thematic and aspectual properties of the verb and how they project to the syntax. Predicate interaction may or may not result in formation of a complex predicate construction, which is identified in the syntax by a Predicate-chain between V and N (the conditions under which a Predicate-chain is formed are discussed in Section 4). This proposal predicts that an external argument in DP does not project to the syntax for tell-type verbs.

Ultimately, this paper shows that (i) the definition of binding domain need not be redefined in different terms for anaphors and pronouns (contra Huang, 1983) iff the binding domain includes the notion 'Predicate-chain'; (ii) the minimal binding domain for hear-type verbs and for tell-type verbs is different (contra Chomsky, 1986, where the binding domain is DP for both verbs): DP for the a-examples; CP for the b-examples; (iii) the explanation to the understood 'control' of the implicit argument in the object DP of tell-type verbs is not found in coindexation of subjects (Chomsky, 1986: PRO control), nor in coindexation of theta-roles (Williams, 1987, 1994: control of theta-roles), but in coindexation of Predicates ('Predicate-chains'); and (iv) lexico-semantic properties of a predicate (thematic, aspectual properties) have syntactic consequences: they 'affect' locality for binding.

The paper is organized as follows: Section 2 presents background information on the problem of DP-binding; Section 3 discusses properties of the verbal and nominal heads and points out a contrast between the a- and b-examples at the level of DP. Section 4 presents the proposal for predicate interaction, complex predicate constructions (formed at Lcs) and Predicate-chains (projected to the syntax). Section 5 presents conclusions.

2. Background

2.1 The Binding Theory

The Binding Theory (BT) is concerned with the conditions that determine when an anaphoric expression (anaphor or pronoun) can be referentially dependent on an antecedent in a given representation. Consider (7):
(7)  
   a. The children$_i$ stared at each other$_i$.
   b. The children$_i$ stared at them$_i$.
   c. The children$_i$ saw their parents$_j$ staring at each other$_{i/j}$.
   d. The children$_i$ saw their parents$_j$ staring at them$_{i/j}$.

The anaphor *each other* is referentially dependent on the *children* in (7a), while in (7c) it can only refer to their parents. The pronoun them can be referentially dependent on the *children* in (7d), but not in (7b), where it is understood as referring to a discourse or situational 'antecedent'. It is also the case that the pronoun in (7d) cannot corefer with their parents.

In its standard version (Chomsky 1981), the BT is based on a 3-way classification of nominal expressions and is stated as conditions that describe proper binding in a local domain, identified as a governing category (gc):

(8)  
   Condition A: an anaphor is bound in its gc.
   Condition B: a pronoun is free in its gc.
   Condition C: an R-expression is free.

A governing category is defined as in (9):

(9)  
   $\alpha$ is a gc for $\beta$ iff $\alpha$ is the minimal category containing $\beta$, a governor of $\beta$, and a subject accessible to $\beta$.

This definition for locality in binding predicts complementarity between anaphors and pronouns, since the binding domain (gc) is computed in the same way for all anaphoric expressions. The examples in (7) are captured by (8) and (9) in a straightforward way:  

(10)  
   a. $[gc\text{The children}_i \text{ stared at each other}_i]$ 
   b. $[gc\text{The children}_i \text{ stared at them}_i]$ 
   c. $\text{The children}_i \text{ saw } [gc\text{ their parents}_j \text{ staring at each other}_{i/j}]$ 
   d. $\text{The children}_i \text{ saw } [gc\text{ their parents}_j \text{ staring at them}_{i/j}]$

In (10a) and (10b), where the main clause is the gc, the anaphor, but not the pronoun, is bound to the main clause antecedent *the children*. In (10c) and (10d), where the embedded clause is the gc, the pronoun, but not the anaphor, can be bound to the embedded antecedent *the children*. In all cases, we find complementarity between anaphors and pronouns.

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2 For explanatory purposes, the structures in (10c) and (10d) have been simplified.
2.2 DP-contexts and non-complementarity of anaphors and pronouns

It was noted by Huang (1983) that the definition of the BT as in (8) and (9) presents conceptual and empirical problems. Empirically, the prediction for complementarity does not appear to hold in DP-contexts like those in (11), where both pronouns and anaphors can corefer with the clausal subject:

(11)  a. The children$_i$ heard stories about each other$_i$/them$_i$.
     b. John$_i$ saw pictures of himself$_i$/him$_i$.

Conceptually, the condition on accessibility of the SUBJECT appears to be stipulative for pronouns. Huang (1983) proposed the following definition of governing category to overcome these problems:

(12) $\alpha$ is a gc for $\beta$ iff $\alpha$ is the minimal category containing $b$, a governor of $\beta$, and a SUBJECT that, if $\beta$ an anaphor, is accessible to $\beta$.

This definition accounts for cases of non-complementarity distribution, as in (11), where the gc for anaphors is different from the gc for pronouns since (12) states that there is no constraint in accessibility of the SUBJECT for pronouns:

(13)  a. $[^{gc} \text{The children}_i \text{ heard } [ \text{ stories about each other}_i ]]$
     b. $[\text{The children}_i \text{ heard }[^{gc} \text{ stories about them}_i ]]$

2.3. The Hear/Tell contrast and two accounts in terms of control

Huang's (1983) definition in (12) is challenged by the following examples that Chomsky (1986) points out, where verbs like hear/ tell contrast in the binding relations they allow:

(14)  a. The children$_i$ told stories about each other$_i$.
     b. The children$_i$ heard stories about each other$_i$.
     c. *The children$_i$ told stories about them$_i$.
     d. The children$_i$ heard stories about them$_i$.

Huang's (1983) definition of gc accounts for (14ab) and (14d) but cannot explain the ungrammaticality of (14c) nor the contrast between (14c) and (14d).
2.3.1. Chomsky (1986): implicit argument and control of PRO

Chomsky (1986) explains (14) by positing a PRO in subject position of the 'story-NP'.\(^3\) It will be coindexed with the pronoun and its antecedent in (14c) but not in (14d). This is shown in (15):

\[
\begin{align*}
(15) & \quad a. \quad \text{*The children}_i \text{ told [PRO}_i\text{ stories about them}_i] \quad (=14c) \\
& \quad b. \quad \text{The children}_i \text{ heard [PRO}_j\text{ stories about them}_i] \quad (=14d)
\end{align*}
\]

Chomsky claims that this would explain the different interpretation that apparently exists between (14c) and (14d): "an explanation is suggested by the fact that in [(14c)], we assume that the stories are 'theirs', while in [(14d)], we assume them to be someone else's." (Chomsky, 1986: 167).

However, examples like (14b), counterpart of (15b) with an anaphor instead of a pronoun, cannot be taken to have a PRO in subject position of the NP because this PRO should have the same index as in (15b) (the matrix verb is the same), and this would result in an ungrammatical sentence.

Chomsky then explains that "presence of the implicit argument as subject is optional: if present, the interpretation is fixed depending on the indexing; if absent, the interpretation is free." (Chomsky, 1986: 167). Conceptually, this solution is not without problems. The reason for the optionality of PRO in subject position is not clear and the PRO-solution cannot systematically account for all cases.

In order to account for the conceptual problem addressed in Huang (1983), Chomsky (1986) redefined the notion of gc in terms of a "complete functional complex" (CFC):

\[
\begin{align*}
(16) & \quad \text{"a gc is a "complete functional complex" (CFC) in the sense that all grammatical functions compatible with its head are realized in it; the complements necessarily, by the Projection Principle, and the subject which is optional unless required to license a predicate, by definition." (Chomsky, 1986: 169).}
\end{align*}
\]

The notion of a CFC together with an indexing theory of BT-compatibility

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\(^3\) Chomsky's idea is to draw an analogy between (14) and the following examples where a possessive pronoun in Spec position of NP acts as a subject so that the gc = NP:

i. \(\text{they}_i \text{ told [ stories about each other}_i] \)
ii. \(\text{*they}_i \text{ heard [ my stories about each other}_i] \)
iii. \(\text{*they}_i \text{ told [ stories about them}_i] \)
iv. \(\text{they}_i \text{ heard [ my stories about them}_i] \)
should account for the binding phenomena in general. However, the optionality of the subject is not motivated and it is not clear how this definition could account for the contrasts in (14).

2.3.2. Williams (1987, 1994): implicit argument and control of theta-roles

Williams (1987) acknowledges inference of agency (first noted in Jackendoff, 1974) in examples like (17) and proposes an account that, as Chomsky’s (1986), involves control but also A-structure. In (17a) and (17b) the agent of N is controlled, while in (17c) the theme of N is controlled. Williams argues on the basis of the following data that, in (17a) and (17b), an external argument in DP is not syntactically projected:

(17)  
   a. John took a picture of Mary.  
       \[ (A_1, \text{th}) \quad (A_r, \text{th}) \]  
   b. John performed an operation on Harry.  
       \[ (A_1, \text{th}) \quad (A_r, \text{th}) \]  
   c. Mary underwent an operation.  
       \[ (A_1, \text{th}) \quad (A, \text{th}_i) \]

In (18), an adverb appears in subject position of a predicate whose implicit agent argument is ‘controlled’ by another clausal subject. In (19), the theme argument appears to be fronted and “the position thought to be controlled is filled by an uncontrolled NP”; Mary is interpreted as theme, John is understood as the agent of the operation.

(18)  
   a. Yesterday’s attempt to leave.  
       (attempter = leaver)  
   b. Yesterday’s decision that John was the best candidate.  
       (decider = John)

(19)  
   John performed Mary’s operation.

Williams (1987) takes this to indicate that “it is a particular theta role, not a syntactic position, which is the target of this kind of control rule” (p. 153) and concludes that “it is not the structural configuration that governs coreference, but rather the control relations holding between theta-roles themselves, the elements of argument stuctures”(p. 157), proposing a redefinition of the BT so that it “governs the binding of theta roles themselves, not the NPs that the theta-roles are assigned to”(p. 158).

There are problems with Williams’ proposal for control of unassigned theta-roles and with a BT that does not operate in the syntax. Empirically,
a ‘theta-BT’ cannot make the right predictions about the following examples:

(20)  a. Theyi expected each otheri to win.
     b. Theyi arranged for each otheri to win.

The data in (20) (from Chomsky (1986)) are strong evidence that the BT must be stated in terms of syntactic positions and that more than binding of coarguments is involved.

Also, given recent proposals on the structure of DP with functional and lexical projections that mirror those under CP (cf. Valois, 1991, Carstens, 1991) and their respective Specifier positions, it is not clear that an agent pro/PRO cannot be syntactically realized for the embedded N.

3. Testing a Hypothesis

In this section, we will present and test a hypothesis about how the a- and b-examples differ in the syntax, by looking into the structure projected by the heads V in CP and N in the embedded DP.

Consider, first, the following examples and notice that the relevant contrast is not limited to hear and tell or to story/picture contexts, but represents a general phenomenon:

(21)  a. The childreni heard stories about themi.
     b. *The childreni told stories about themi.

(22)  a. The childreni found pictures of themi.
     b. *The childreni took pictures of themi.

(23)  a. Johni read a report about himi.
     b. *Johni wrote a report about himi.

(24)  a. The doctori supervised an operation on himi.
     b. *The doctori performed an operation on himi.

The contrast in coreference possibilities of the pronoun indicate that, in the syntax, there is a structural difference between the a- and b-examples which is not immediately apparent.

Lexically, the a-examples differ from the b-examples only with respect to the verb. The fact that the contrast is not limited to hear and tell or to story/picture contexts will allow us to identify which are relevant properties, of those in which the a- and b-verbs differ.

I would like to present the following hypothesis:
(25) **Hypothesis**: the structure projected by the a- and b-verbs differs not at the level of CP but at the level of the embedded DP. In particular, in the b-examples, unlike the a-examples, an external argument in DP is not projected to the syntax.

To test this hypothesis we will look into the structure projected by the verb (level of CP) and the structure projected by the noun (level of DP).

3.1. **Structure projected by V**

In (21) through (24), all object NPs are bare (not introduced by a preposition) and occur adjacent to the verb. This suggests that they can directly receive Accusative Case from the verb. Evidence for the fact that the DP objects in (21) through (24) are governed by V is that they can be passivized:

(26) a. Stories about John were heard by the children.
    b. Stories about John were told by the children.

(27) a. Pictures of Bill were found by the children.
    b. Pictures of Bill were taken by the children.

(28) a. A report about horse farms was read by John.
    b. A report about horse farms was written by John.

(29) a. An operation on the patient was supervised by Dr. Holt.
    b. An operation on the patient was performed by Dr. Holt.

With respect to argument structure, (30) through (33) show that all verbs require at least one internal argument:

    b. *The children told.

(31) a. *The children found.

(32) a. John read.\(^4\)
    b. John wrote.

(33) a. *The doctor supervised.
    b. *The doctor performed.

---

\(^4\) Some verbs have two lexical entries: one transitive, the other intransitive. This explains the grammaticality of (32).
Another property of these verbs is that they take an external argument. In English, this can be tested by replacing the subject with an expletive (a non-argumental subject) to satisfy the non-pro-drop property of the language:

(34)  a. *it heard stories about Bill.
      b. *there heard stories about Bill.

(35)  a. *it told stories about Bill.
      b. *there told stories about Bill.

The resulting ungrammaticality, which extends to the other pairs, indicates that an external argument is required to meet the Theta-Criterion (cf. Chomsky, 1986: 96-7):

(36)  **Theta Criterion:**
each argument a appears in a chain containing a unique visible theta-position P, and each theta-position P is visible in a chain containing a unique argument a’, where ‘a position P is visible in a chain if the chain contains a Case-marked position, which we may take to be the head.’

The next step is to identify the structural properties of the two verbs as a consequence of their argument structure and identify the theta-marking properties of the V head. Here, I will refer to Grimshaw’s (1990) classification of possible A-structures:

(37)  a. Transitive agentive
      (x (y))
      agent theme

b. Ditransitive
      (x (y (z)))
      agent goal theme

c. Unergative
      (x)
      agent

d. Psychological state
      (x (y))
      exp. theme
e. Psychological causative
   \((x \ (y))\)
   exp. theme

f. Psychological agentive
   \(x \ (y)\)
   agent exp.

g. Unaccusative
   \((x)\)
   theme

Given the properties of the a- and b-verbs that we have discussed so far, we will identify the structures for each predicate verb to be the following:

\[(38)\]
\[\text{a-verbs} \quad \text{b-verbs}\]
\[\text{to hear:} \quad \text{Psychological state} \quad \text{to tell:} \quad \text{Ditransitive}\]
\[\ (x \ (y)) \quad \text{exp. theme} \quad \ (x \ (y \ (z))) \quad \text{agent goal theme}\]
\[\text{to find} \quad \text{to take} \quad \text{to read} \quad \text{to write}\]
\[\text{to supervise:} \quad \text{Transitive agentive} \quad \text{to perform:} \quad \text{Transitive agentive}\]
\[\ (x \ (y)) \quad \text{agent theme} \quad \ (x \ (y)) \quad \text{agent theme}\]

I will assume that the verb to hear is a stative verb, not a causative verb. The verb to tell creates a double object construction (see (39b)) and the dative argument can be passivized (see (39c)). The theta-role identified with a dative argument is that of goal:

\[(39)\]
\[\text{a. The children told stories about Bill to John.}\]
\[\text{b. The children told John stories about Bill.}\]
\[\text{c. John was told stories about Bill.}\]

All other verbs take the A-structure for a transitive agentive.

We can conclude that there is no contrast between the a- and b-verbs in terms of Case-marking or Theta-marking that generalizes across all examples.

An indication that the difference between the a- and b-examples might involve the A-structure of N comes from the fact that in (40), hear can take a DP introduced by from with theta-role Source:

\[(40)\]
\[\text{The children heard stories about Bill from John.}\]
The interpretation of the PP from John in (40) is linked to the Agent of the
event associated with the N stories. (40) can be paraphrased as (41):

(41) a. The children heard John tell stories.

In the next subsection, we explore the structure projected by N in the
embedded DP.

3.2. Structure projected by N

In the previous subsection, we reached the conclusion that there is no
structural difference at the level of CP that would systematically explain
the contrast between the a- and b-examples in the minimal pairs in (21)
through (24). This conclusion, so far, coheres with our hypothesis in (25).
We now need to explore the structure projected by the head N in the
embedded DP, object of V, to find out whether, in fact, the contrast
between the a- and b-examples is to be found at the level of DP.

Notice that, in (21) through (24), all objects in DP are introduced by a
preposition and receive Oblique Case. The complement of the preposition
behaves like the object of N in that it can be fronted to receive Genitive
Case in a process similar to passivization at the CP-level, as shown in the
following examples:

(42) a. The children heard John’s (TH) stories.
b. The children told John’s (TH) stories.

(43) a. The children found John’s (TH) pictures.
b. The children took John’s (TH) pictures.

(44) a. John read Bill’s (TH) report/ biography.
b. John wrote Bill’s (TH) report/ biography.

(45) a. The doctor supervised Harry’s (TH) operation.
b. The doctor performed Harry’s (TH) operation.

With respect to the object, there appears to be no difference in (42)
through (45) between the a- and b-examples.

Next, we explore the possibility to realize overtly an external
argument in DP.

3.2.1. Postnominal Agents: by-phrases

As in passive constructions at the level of CP, at the level of DP Agent
arguments of N can also be realized overtly in by-phrases. Notice what
happens when we try to insert an agent *by*-phrase in all examples:5

(46)  a. The children heard stories about John by an old man (AG).
    b. *The children told stories about John by an old man (AG).

(47)  a. The children found pictures of John by an old man (AG).
    b. *The children took pictures of John by an old man (AG).

(48)  a. John read an article about Peru by a reporter for Time (AG).
    b. *John wrote an article about Peru by a reporter for Time (AG).

(49)  a. Dr. Holt supervised an operation on Harry by Dr. Smith (AG).
    b. *Dr. Holt performed an operation on Harry by Dr. Smith (AG).

Here, we find the first significant contrast between the a- and b-examples: only in the a-examples can an agent *by*-phrase be overtly realized in DP.

3.2.2. Prenominal Agents: Possessivization

Another possibility for overt realization of the external argument is genitive Case-marking (or ‘possessivization’):

(50)  a. The children heard an old man’s (AG) stories about John.
    b. *The children told an old man’s (AG) stories about John.

(51)  a. The children found an old man’s (AG) pictures of John.
    b. *The children took an old man’s (AG) pictures of John.

(52)  a. John read Bill’s (AG) article about Perú.
    b. *John wrote Bill’s (AG) article about Perú.

(53)  a. Dr. Holt supervised Dr. Smith’s (AG) operation on Harry.
    b. *Dr. Holt performed Dr. Smith’s (AG) operation on Harry.

Here we also find that the agent interpretation of a Genitive Case-marked NP in DP is incompatible with the b-verbs. The b-examples in (50) through (53) cannot be interpreted as in (54):

5 The same contrast obtains if the object of N (theme argument) is fronted as in (42) through (45); however, the postnominal position for Theme is unambiguous and therefore a better choice when testing the Agent argument.
(54) 50b: The children told stories about John that an old man told
51b: The children took pictures of John that an old man took
52b: John wrote an article about Peru that Bill wrote
53b: Dr. Holt performed an operation on Harry that Dr. Smith performed

however, the b-examples can take the following interpretations:

(55) 50b: The children told stories about John that an old man had made up (author)
51b: The children took pictures of John that an old man had suggested taking
52b: John wrote an article about Peru that Bill had been assigned to write
53b: Dr. Holt performed an operation on Harry that Dr. Smith was supposed to have performed

(54) coheres with the ‘control’ facts discussed for examples like (43b) and (45b) by Jackendoff (1974), Chomsky (1986) and Williams (1987). In Chomsky (1986) and Williams (1987) an implicit agent argument is ‘controlled’ by the main clause agent subject. However, the paraphrases for (50b) through (53b) in (54) suggest that these ‘control’ facts should not be understood as ‘control of an implicit argument’ but, instead, as involving ‘control of an event’. This suggestion is pursued in Section 4.

With respect to the possible readings for the b-examples, in (55), the paraphrases for (46) through (49) indicate presence of non-argumental modifiers, as in Anderson (1984) and Grimshaw (1990).

3.2.3. Arguments and modifiers of N

By-phrases and possessive NPs can introduce arguments of N or appear as modifiers. The distinction between arguments and non-argumental complements/ modifiers is based on a classification of nominal heads in DP as being argument-taking or non-argument-taking, where the former are identified as ‘complex event nominals’ and the latter can be either ‘simple event nominals’ or ‘result nominals’ in Grimshaw (1990): “nouns denoting complex events, which have an associated event structure, (...) also have an argument structure. Other nouns- those that denote what I call simple events, and the result nominals- have no argument structure. (....) These nouns do, of course, have a meaning, sometimes even a relational meaning expressed by their lcs [lexico conceptual structure] representation” (Grimshaw, 1990: 45).

Only complex event nominals are like verbs in that they have an event
structure and take arguments (e.g., felling, examination as in The doctor’s (AG) examination of the patient (TH) took a long time); simple event nominals (e.g., race, exam) refer to an event without projecting an event structure nor arguments; result nominals (e.g. song, examination as in John’s examination was long) refer to a concrete entity and name the output of a process or an element associated with the process or event.

Complex event nominals are realized in the syntax together with their arguments; however, result nominals and simple event nominals can only take modifier-type phrases: non-argumental ‘satellite’ phrases which can be ‘complements’ (correspond to 1cs arguments) or ‘modifiers’ (do not correspond to 1cs arguments).

By-phrases and possessive NPs, then, are ambiguous between an argument interpretation (agent) and modifier-like interpretations: “a possessive modifying examination can be the possessor, author, or taker of the exam (...). Alternatively, it can take an A-structure related interpretation as in [John’s examination of the patients took a long time] where John is interpreted as the agent of the actioni (Grimshaw, 1990: 48).

3.2.4. No external argument in DP for b-examples

So far, we have identified a contrast between the a- and b-examples: in the b-examples an agent argument cannot be overtly realized in DP, neither in postnominal or prenominal position. Given this fact, it could be the case that a pronominal empty category (pro or PRO) was realized in subject position and that it was obligatorily coindexed (controlled) with the main clause agent subject (as in Chomsky’s (1986) and Williams’ (1987) proposals). Alternatively, it could be the case that an external argument is not projected at all in DP for the b-examples.

We will assume, with Grimshaw (1990), that the distinction between complex event nominals and simple event nominals or result nominals correlates with argument-taking nominals and modifier/ complement-taking nominals. We assume that N in the a-examples is a complex event nominal, while N in the b-examples is not; hence, an external argument cannot be projected to the syntax by N in the b-examples.

With respect to the a-examples, note that the event denoted by the verb implies that an event, associated with the nominal in the embedded DP, must take place either simultaneously with respect to the event denoted by the verb or must have taken place prior to it.

The data discussed in Sections 3.1 and 3.2 confirm the hypothesis in (25). Namely, we have found that the relevant difference between hear-type verbs and tell-type verbs is not found at the level of CP, but at the level of DP: N in hear-type verbs projects an external argument; N in tell-type verbs cannot project an external argument.
4. Proposal

4.1. Assumptions: A-structure (Grimshaw, 1990)

The proposal that I will present in this section assumes the theory for Argument structure in Grimshaw (1990), where it is argued that the A-structure of a Predicate in the syntax "represents the argument-licensing capacity of a predicate without specifying any semantic information about its arguments, except for their relative prominence" (p. 43). In this theory, A-structure is projected in accord with prominence relations ‘within’ and ‘across’ Thematic and Aspectual Hierarchies:

(56)  
a. Thematic Hierarchy: (Agent (Experiencer ( ... 
   b. Aspectual Hierarchy: (Cause (non-Cause ...

The Thematic Hierarchy (cf. Jackendoff, 1974) is defined by theta-assigning properties of the predicate; the Aspectual Hierarchy is defined by the causal structure of the predicate where the argument Cause is most prominent. The aspectual dimension results from the “projection of an abstract event structure (e) which always includes two subparts, an activity (act) and a state or change of state (s/cos)” (Grimshaw, 1990: 40). For example, consider (57):

(57) John broke the window

Thematically, break assigns an agent theta-role to John and a theme theta-role to the window. Aspectually, break takes an event structure where there is an activity (breaking of the window) and a resulting state (a broken window). John is identified as Cause and the window as Non-Cause. This means John will be specified as (AG, C) and the window as (TH, NC).

In Grimshaw’s theory, a distinction is made between Ics-arguments and syntactic arguments: “the proposal here crucially distinguishes between syntactic arguments, which stand in a grammatically significant relationship to predicates, and what we might call participants.”(p. 54). At Ics, Predicates take Ics-arguments (‘participants’ in Grimshaw, 1990); in the syntax, Ics-arguments can be projected as syntactic arguments or as ‘complements’, modifiers to non-argument-taking nominals (refer to Section 3.2.3). The distinction between Ics-arguments and syntactic arguments will be used in the proposal presented in the next subsections.

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6 In Grimshaw (1990), the Thematic Hierarchy is stated as follows:

(Agent (Experiencer (Goal/ Source/ Location (Theme))))
4.2. Predicate selection

Let us assume that, at Ics, some predicate verbs select an (x, y) structure (relational template) for their internal argument (e.g. verbs like read, write, perform, undergo) and others don’t (e.g. buy, sell).

Next assume that this predicate verb Pred1 has the template (x,y).

If Pred1 (verb) has the structure (x, y) and it has the property of selecting a Pred2 (noun) also with structure (x,y) then a candidate for Pred2 will be either a noun that has the structure (x,y) (i.e. a process nominal with complex morphology) or (ii) a noun that can get ‘adjusted’ (cf. Larson, 1988)\(^7\) to the required template: (x,y). To exemplify consider (58):

\[
\begin{align*}
(58) & \quad \text{PRED1} \quad \text{PRED2} \\
& \quad \text{a. undergo/perform} \quad \text{operation} \\
& \quad (x1,y1) \quad (x2,y2) \quad y1 = (x2,y2) \\
& \quad \text{b. find/take} \quad \text{picture} \\
& \quad (x1,y1) \quad (x2,y2) \quad y1 = (x2,y2) \\
& \quad \text{c. read/write} \quad \text{report} \\
& \quad (x1,y1) \quad (x2,y2) \quad y1 = (x2,y2) \\
& \quad \text{d. hear/tell} \quad \text{story} \\
& \quad (x1,y1) \quad (x2,y2) \quad y1 = (x2,y2)
\end{align*}
\]

The predicate verbs (Pred1) in (58) select the structure of an event with two participants where one is an individual and the other an event.

4.3. Adjusting Pred2 to the (x,y) template

Can Pred2 (i.e., the noun selected by Pred1) take the (x,y) template?

N has to be adjusted to an (x,y) template because of predicate selection. The following chart shows how morphological processes by which verbs can be nominalized and others in which nouns are ‘verbalized’ provide the basis for potential adjustment of the noun (Pred2) to the (x,y) structure.

---

\(^7\) Larson (1988: 387) discusses V' reanalysis (e.g. give-to him a book) as a process similar to ‘cognate object formation’ (e.g. ‘die a painful death’) where in one case a double object construction gets adjusted to a transitive template and in the other case an unergative verb gets adjusted to the transitive template.
In some cases it is the verb that takes complex morphology (e.g., 59b), in others it is the noun that results from morphological affixation to a verb (e.g., 59a). Still in other cases (e.g., 59c and 59d) it is not clear from the composition of the word how it obtained its category N or V (i.e., if it was derived or not).

In (59d) it is not immediately obvious how the noun story can be adjusted to take an (x,y) template. Here, I show that in Spanish (where all the facts discussed so far hold the same) *cuento* (‘story’) gets adjusted to the (x, y) template through association with *contar* (‘to tell’), a verb which could very well have been derived from the noun. It could be the case that when a double process is involved (i.e., when N is associated to the V which derived from N) what happens is that: (i) V is derived from N1, (ii) N1 shares lexico-semantic features with N2, N3, ..., (iii) N2, N3, ... are then adequate substitutes for N1.8

In (59) N (a derived or underived noun) copies the (x,y) structure from the verb from which it is derived or which took the noun as head in its morphological derivation.

### 4.4. Complex Predicate Constructions

Based on some assumptions (‘association’ with V through derivational morphology, copy of V’s (x, y) structure), we have motivated the (x,y) structure for N in examples (21) through (24), repeated here as (60) through (63):

---

8 It is a possibility that to tell a tale is the equivalent of the Spanish contar un cuento (‘to tell a story’); i.e., tale being N1 for story.
(60)  a.  The children$_i$ heard stories about them$_i$.
    b.  *The children$_i$ told stories about them$_i$.

(61)  a.  The children$_i$ found pictures of them$_i$.
    b.  *The children$_i$ took pictures of them$_i$.

(62)  a.  John$_i$ read a report about him$_i$.
    b.  *John$_i$ wrote a report about him$_i$.

(63)  a.  The doctor$_i$ supervised an operation on him$_i$.
    b.  *The doctor$_i$ performed an operation on him$_i$.

In this section, I will propose that the possibility of obtaining a complex predicate construction determines the a or b outcome. This will depend on the interaction of two hierarchies: thematic and aspectual, and a theory of Prominence as in Grimshaw (1990).

A complex predicate is created when Pred$_1$ and Pred$_2$ combine their (x, y) templates into one as in (64):

(64)  Pred$_1$ (x$_1$,y$_1$) + Pred$_2$ (x$_2$,y$_2$) = Pred$_{1+2}$ (x,y)

The (x,y) template for a complex predicate results from a reanalysis of the structure for Pred$_1$ and that of Pred$_2$ where one of the 1cs-arguments (or participants) in the (x$_2$,y$_2$) structure for y$_1$ gets suppressed. The possibilities are the following:

(65)  a.  \[
\begin{array}{c}
\text{Pred}_1 \\
\text{Pred}_2 \\
\text{Pred}_{1+2}
\end{array}
\begin{array}{c}
( \quad x_1 \quad , \quad (y_1) \quad ) \\
( \quad \emptyset \quad , \quad y_2 \quad ) \\
( \quad x=x_1 \quad , \quad y=y_2 \quad )
\end{array}
\]

b.  \[
\begin{array}{c}
\text{Pred}_1 \\
\text{Pred}_2 \\
\text{Pred}_{1+2}
\end{array}
\begin{array}{c}
( \quad x_1 \quad , \quad (y_1) \quad ) \\
( \quad x_2 \quad , \quad \emptyset \quad ) \\
( \quad x=x_1 \quad , \quad y=x_2 \quad )
\end{array}
\]

(65a) shows a resulting complex predicate where x = x$_1$ and y = y$_2$. This is a case where the external argument of Pred$_1$ 'cancels out' the external argument of Pred$_2$ so that the external argument of Pred$_2$ is not projected syntactically. (65b) shows a complex predicate where x = x$_1$ and y = x$_2$. Here the external argument of Pred$_1$ cancels out the internal argument of Pred$_2$, and the internal argument of Pred$_2$ is not projected syntactically.\footnote{It is understood that the internal argument of Pred$_1$ (i.e., Pred$_2$) gets suppressed in both cases.}

\footnote{It is understood that the internal argument of Pred$_1$ (i.e., Pred$_2$) gets suppressed in both cases.}
An example for (65a) is (66a); (66b) is formed as in (65b):

(66)  a. John performed Mary’s operation.
      b. John underwent an operation by Dr. Smith.

We will only be concerned with the structure in (65a) given that it is the one that applies for the predicate verbs in (60) through (63).

4.5. Complex Predicates constrained by Prominence relations between x1 and x2 as determined by the interaction of thematic and aspectual hierarchies

What constrains the formation of a complex predicate? How can we derive the ‘control’ facts in the b-examples?

Assuming the theory for A-structure in Grimshaw (1990), where relations of prominence between thematic and aspectual hierarchies determine a predicate’s A-structure in the syntax, we propose that suppression of the external argument of N when a complex predicate is created depends on prominence relations between the external arguments of the verb (Pred1) and noun (Pred2).

I propose that formation of a complex predicate is constrained in the following way:

(67) For x1 = external argument of Pred1 and for x2 = external argument of Pred2:

      a. if x1 is \geq\ prominent than x2, then x1 cancels x2,
      b. if x1 is < prominent than x2, then x1 cannot cancel x2.

Prominence of x1 as compared to x2 is determined by relative prominence of x1 and x2 in each hierarchy.

I will claim that the values for x1 and x2 in examples (60) through (63) are the following:

(68) a. hear
     b. tell
(69) a. find
     b. take

\[ \begin{array}{ccc}
(\text{V}) & (\text{N}) \\
(\text{EXP, NC}) & (\text{AG, C}) \\
(\text{AG, C}) & (\text{AG, C}) \\
(\text{AG, NC}) & (\text{AG, C}) \\
(\text{AG, C}) & (\text{AG, C}) \\
\end{array} \]

projected syntactically. An alternative is that the resulting template could specify 3 positions and not just 2.
(70)  
  a. read \(\text{(AG, NC)}\) \(\text{(AG, C)}\) 
  b. write \(\text{(AG, C)}\) \(\text{(AG, C)}\) 

(71)  
  a. supervise \(\text{(AG, NC)}\) \(\text{(AG, C)}\) 
  b. perform \(\text{(AG, C)}\) \(\text{(AG, C)}\)

We can see a clear pattern between the a- and b-verbs: x1 for the b-verbs is more prominent than x1 for the a-verbs. AGent is more prominent than EXPERiencer in the Thematic Hierarchy and Cause is more prominent than Non-Cause in the Aspectual Hierarchy. The combination of AGent and Cause for the external argument of the b-verbs is more ‘prominent’ than the combination of AGent/ EXPERiencer and Non-Cause for the external argument of the a-verbs. Now we can apply (67) to (68) through (71):

(72)  
  a. hear \(\text{(EXP, NC)}\) \(x_1\) \(\text{(AG, N)}\) \(x_2\) \(\text{(AG, C)}\) 
  b. tell \(\text{(AG, C)}\) \(\emptyset\) \(=\) complex predicate

(73)  
  a. find \(\text{(AG, NC)}\) \(\text{(AG, C)}\) 
  b. take \(\text{(AG, C)}\) \(\emptyset\) \(=\) complex predicate

(74)  
  a. read \(\text{(AG, NC)}\) \(\text{(AG, C)}\) 
  b. write \(\text{(AG, C)}\) \(\emptyset\) \(=\) complex predicate

(75)  
  a. supervise \(\text{(AG, NC)}\) \(\text{(AG, C)}\) 
  b. perform \(\text{(AG, C)}\) \(\emptyset\) \(=\) complex predicate

The result is that only the external argument of the b-verbs will be able to ‘cancel’ the external argument of the noun. Suppression of the external argument of the noun is determined by the thematic and aspectual properties of the arguments of the verb.

When a complex predicate is formed, the event structure for N changes from the event structure for a complex causative to a state (parallel to the morpho-syntactic process of adjectival passivization of psychological predicates like frighten (>frightened) or depress (>depressed) discussed in Grimshaw, 1990: 129).

4.6. Predicate-chains identify a binding domain

How is a complex predicate projected in the syntax? Each head, V and N, will take an X0 position that will project the structure for CP and DP, respectively. However, a complex predicate construction will be marked as such in the syntax through indexation of V and N. V and N will be P-indexed, forming in this way a Predicate-chain.

With respect to the Binding Theory, if a Predicate-chain has been
formed, then it must be contained in the binding domain for the anaphoric expression. In other words, a Predicate-chain is never 'overlooked' when computing the minimal binding domain for a given anaphoric expression. Once the notion Predicate-chain is included in the definition for binding domain, it naturally follows that pronouns contained in an DP where N is P-indexed with V cannot take the external argument of V as its Antecedent. We are back to the initial contrast:

(76)  
\begin{enumerate}
\item The children\textsubscript{1} heard \textsubscript{bd} stories about them\textsubscript{1} \\
\item *\textsubscript{bd} The children\textsubscript{1} told\textsubscript{P} stories\textsubscript{P} about them\textsubscript{1}
\end{enumerate}

(77)  
\begin{enumerate}
\item The children\textsubscript{1} found \textsubscript{bd} pictures of them\textsubscript{1} \\
\item *\textsubscript{bd} The children\textsubscript{1} took\textsubscript{P} pictures\textsubscript{P} of them\textsubscript{1}
\end{enumerate}

(78)  
\begin{enumerate}
\item John\textsubscript{1} read \textsubscript{bd} a report about him\textsubscript{1} \\
\item *\textsubscript{bd} John\textsubscript{1} wrote\textsubscript{P} a report\textsubscript{P} about him\textsubscript{1}
\end{enumerate}

(79)  
\begin{enumerate}
\item The doctor\textsubscript{1} supervised \textsubscript{bd} an operation on him\textsubscript{1} \\
\item *\textsubscript{bd} The doctor\textsubscript{1} performed\textsubscript{P} an operation\textsubscript{P} on him\textsubscript{1}
\end{enumerate}

The binding domain (bd) is indicated in each case. For the b-examples, the binding domain is DP; for the a-examples, the binding domain is CP. Predicate-chains are indicated by the superscript P on V and N.

In Sections 3.2.1 and 3.2.2, we saw that in the a-examples, but not in the b-examples, the understood agent could be syntactically realized in a by-phrase or in prenominal position (refer to examples (46) through (53)). According to the discussion in Section 4, the external argument of N gets suppressed if a complex predicate is formed. This explains the fact that the understood agent cannot be syntactically realized in the b-examples.

5. Conclusions

In this paper we have presented an explanation for the coreference possibilities of DP-contained pronouns. The problem to be explained was the hear/tell contrast identified in Chomsky (1986), which extends to other pairs like find/take, read/write, supervise/perform, where DP-contained pronouns can be bound to the sentential subject in the first case but not in the second.

The solution to the problem was based on a proposal for complex predicate formation at the lexico-semantic level and Predicate-chains in the syntax.

This solution provides further support (from external arguments) for the independence of thematic and aspectual properties of predicates (conceived as hierarchies in Grimshaw, 1990) and shows that lexico-semantic properties of a predicate have syntactic consequences: they
'affect' locality for binding.

With respect to the Binding Theory, this paper shows that the definition of binding domain need not be redefined in different terms for anaphors and pronouns iff the binding domain includes the notion 'Predicate-chain'. Inclusion of the notion Predicate-chain in the definition of a binding domain shows that the the minimal binding domain for hear-type verbs and for tell-type verbs is different: DP for hear-type verbs; CP for tell-type verbs.
References


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Iterated subject agreement in Standard Arabic

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0. Introduction

This short paper has as its aim a re-examination of various agreement facts in Standard Arabic (SA) which call into question some widely held assumptions of current syntactic theory. The problem is essentially that subject-oriented verbal agreement in SA declarative sentences can be manifested in multiple positions, so that the treatment of agreement as taking place uniquely in a subject agreement projection (Agr\(_S\)P) becomes problematic. Any explanation of these facts must attempt to provide a motivation for A-movement of the subject DP in the overt syntax, by relating the possible positions of the subject to the need for checking of abstractΦ–features and Case features, and at the same time must aim for a principled account of how multiple instantiation of agreement is related to such movement. A further problem, and one that lies at the heart of recent proposals in syntax (within the framework of what has come to be known as Principles and Parameters Theory), is that of optional movement. Why should it be possible for the position of the subject to vary, such that SVAuxO, VSAuxO, and VAuxSO are all attested orders? How can we account for this in such a way that the variation in surface word orders can be shown to arise from the interaction of a minimal set of well-motivated syntactic principles? By making a minimal number of assumptions about the nature of the features driving movement, and taking into consideration principles of Economy of Derivation (Chomsky 1991, 1992), I will show that an analysis of subject agreement in SA leads to certain further predictions which are borne out by the facts.

Throughout the course of this paper I will be assuming the framework of the Minimalist approach to syntax (Chomsky 1991 & 1992, Chomsky & Lasnik 1991 and Lasnik 1993), with certain additional assumptions, which I will take care to point out as the paper proceeds. In particular, among the assumptions I will follow which will determine in large part the account

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1 This paper has benefited from discussion of the issues with Chris Collins, Molly Diesing, and Wayne Harbert. I am greatly indebted to Raja Bahloul and Maher Bahloul for braving the cold to help me with Standard Arabic data, and to the editors of this volume, Luis and Natália, for patience above and beyond the call of duty.

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that I will provide of these phenomena are the following: lexical insertion (from the morphological and presyntactic phonological components of the lexicon) is of fully inflected forms, A-movement is motivated by requirements of Case and feature checking, and all agreement takes place under Spec-head agreement.

The paper is structured as follows: in §1, I present the data which will serve as the jumping-off point of the analysis, and critically review two previous approaches to problems of multiple instantiations of subject agreement, those of Carstens & Kinyalolo (1991) and Bahloul & Harbert (1992). In §2, the core of the paper, I develop an approach to an analysis of these facts based on the assumptions of the minimalist approach to syntactic theory, and on the basis of this analysis present and test some of the predictions entailed by the resulting system of constraints on the specifications of the morphological features of functional heads. Some of these facts lead to open questions, but the greater part lend support to a view of such features according to which there are lexical redundancy rules regulating the co-occurrence of certain features. §3 is devoted to a brief summing-up of the outcome of the discussion.

1. Background to the problem

In this section I present the data from Bahloul & Harbert (1992), and examine their proposals as well as those of Carstens & Kinyalolo (1991) regarding similar agreement facts in Bantu languages. I will not take up all of the argumentation they provide in favour of their analysis; in particular, the analysis developed by Carstens & Kinyalolo (and more recently by Carstens 1993) of the mechanisms by which features of the NP (or DP) are made present to syntactic operations will not be dealt with here, my assumption being, in effect, that the derived internal structure of $X^0$ and XP categories and the various features they possess is unproblematic, that we can assume that the former is taken care of by principles of the morphological component of the lexicon (such as those in Aronoff 1976, Di Sciullo & Williams 1987, Lieber 1992, etc.), and that the latter is also explicable by means of operations other than index percolation, coindexation under government and so on. I am aware that these assumptions are somewhat enormous ones to make, since it is precisely these questions that are currently hotly debated, but my immediate concerns lie elsewhere.

What I will take from Carstens & Kinyalolo (1991) and Bahloul & Harbert (1992) is their shared analysis of the facts of Swahili and Arabic as providing evidence for agreement taking place elsewhere than necessarily in agreement phrases. This of course raises the question of whether, if agreement is to be instantiated in some cases merely under the Spec-head
relation, we need to assume the presence of agreement phrases at all. Again, this question goes to the heart of the matter, but cannot be dealt with here in its entirety. It seems to me that a certain degree of explanatory force is provided by the proposal of agreement phrases in a variety of languages, and that the null hypothesis is that, until a convincing case can be made to the contrary, we should continue to assume their presence even in languages that make use of alternative means for the expression of morphological agreement. It may turn out that AgrO P and Agrg P, which are not filled until LF in certain cases, are for this reason projections available in Universal Grammar, and that agreement instantiation by other means is a language-specific device for which ample evidence will always exist, so that learnability is not an issue. Since I will be concentrating here on subject agreement, I will have little to say about AgrO P, but I will show that an adequate explanation of various facts, in particular those of transitive expletive constructions (TECs) and object shift (OS), strongly support the presence of these functional projections.

1.1. The facts

The relevant facts of Arabic are as follows (Bahloul & Harbert 1992): in a declarative phrase with an auxiliary verb (expressing Tense) and a main verb (expressing Aspect), there are three possible surface positions for the subject, giving the orders SAuxVO, AuxSVO, and AuxVSO. The relevant sentences are given in (1) (Bahloul & Harbert's (3-5)).

(1)  a. kaan-at ta-ktub-u al-bint-aani darsa-humaa
    was-3FS 3F-write-S the-girl-3D lesson-FD
    'The two girls were writing their lesson'

   b. kaan-at al-bint-aani ta-ktub-aani darsa-humaa
      was-3FS the-girl-3D 3F-write-D lesson-FD

   c. al-bint-aani kaan-ataa ta-ktub-aani darsa-humaa
      the-girl-3D was-3FD 3F-write-D lesson-FD

   d. *al-bint-aani kaan-at ta-ktub-aani darsa-humaa
      the-girl-3D was-3FS 3F-write-D lesson-FD

   e. *kaan-at al-bint-aani ta-ktub-u darsa-humaa
      was-3FS the-girl-3D 3F-write-S lesson-FD

The essential generalization here is that any verbal element to the right of the subject must have full agreement with the subject, expressed in terms of gender, person and number; otherwise, agreement is either only with
the gender feature of the DP (if we assume that 3rd person is a default) or with both gender and person. Bahloul & Harbert explore in greater depth than I will be able to do here the details of agreement with conjoined DPs, which exhibit some interesting patterns (but see §2.4 for the facts), but this agreement pattern requires a proper explanation in itself. One would hope that the analysis that will adequately explain the facts in (1) will carry over to conjoined DPs, and will provide the basis for the explanation of agreement exhibited by indefinite vs. definite DPs as well.

1.2. Two previous approaches to agreement

In this section I will examine two previous approaches to the problem I am examining in this discussion, both of which directly confront the question of multiple morphological instantiations of subject agreement features (Carstens & Kinyalolo 1991, Bahloul & Harbert 1992). Since both proposals are coherent in a theory-internal sense, my comments will have more the flavour of a critique on metatheoretical grounds; I will focus on problems raised by these analyses for a minimalist approach to syntactic theory, such as the motivation for A-movement, and uneconomical and potentially unwarranted theoretical devices.

1.2.1. Carstens & Kinyalolo (1991)

Carstens & Kinyalolo (1991) (henceforth C & K) present an analysis of agreement facts in the Bantu languages Swahili and Kilega which is pertinent to the issues under consideration here. The main theoretical claims they make are the following:

(i) there is no need for the postulation of Agr projections; all agreement takes place in a Spec-head relation, in either lexical or functional categories;
(ii) the internal structure of the IP projection is TP immediately dominating AspP (Aspect phrase);
(iii) since Spec of VP is the locus of verbal object agreement, subjects are base-generated in a position adjoined to VP (cf. Koopman & Sportiche 1988);
(iv) specifier positions are not inherently A- or A'-positions; the nature of a Spec position can only be derived on the basis of the A/A' nature of the head of the chain of which an element occupying a Spec position is a member;
(v) short verb movement is movement out of VP to the head of the Aspect projection;
(vi) tense and aspectual morphology are base-generated in $T^0$ and $Asp^0$ and merge with the verb in the course of $X^0$ movement of the verb.

An example of multiple subject agreement in Swahili is given below in (2, C & K's (7a, 5a)): in sentences with both an aspect and tense marker (in boldface in the examples below), these markers appear as affixes; tense appears on the semantically null verb *kuwa* 'to be', to the left of the main verb, which carries aspect marking.

(2) a. Juma a-li-kuwa a-ki-pika chakula jiko-ni
   Juma 1agr-past-be 1agr-cont-cook 7food 5kitchen-loc
   'Juma was cooking food in the kitchen'

   b. Juma a-ta-kuwa a-me-pika chakula
   Juma 1agr-fut-be 1agr-perf-cook 7food
   'Juma will have cooked food'

In both cases here, we see that subject agreement—*juma* being a Class 1 noun—is spelled out both on the semantically null tense-bearing verb *kuwa* as well as on the aspectually marked main verb, suggesting that subject movement has taken place through both of these projections, triggering Spec-head agreement in both cases. The structure that C & K attribute to an example such as (2b) is given in (3).

(3)

Here the subject DP has moved through SpecAsp and landed in SpecT,
and the main verb *pika* has raised to Asp\(^0\) to pick up the aspectual marker *me*. The subject agreement marker *a* is manifested on the main verb and the dummy tense-supporting verb *kuwa*. Several questions can be asked immediately, some of which will remain unanswered until the analysis is presented in §2: the most pressing of these is the question of the motivation for A-movement of the subject through AspP on its way up to check nominative Case in SpecTP. Under current assumptions, the principle of Greed is said to motivate all A-movement (perhaps all movement), so we should be able to propose a principled reason for the subject to stop off in SpecAsp on the way to SpecT.

A further question is in connection with assignment of Case to the object, and movement of the object in general. Given the assumption that the A/A' nature of a specifier position is ultimately dependent on the nature of the head of the chain of which the element in Spec is a member, what is to prevent the object from moving from its base-generated position as complement of the verb up to SpecAsp, and from there up to SpecT? At the time this movement, the VP-adjoined position occupied by the subject would be neither A nor A', so Relativized Minimality cannot be invoked to block movement of the object over a position that—under the derivation given in (3)—only later will be identifiable as an A-position.

C & K are not specific about the conditions under which accusative Case is assigned to the direct object, and rely on optional movement motivated by Case assignment to explain the optionality of object agreement in cases such as (4, C & K's (39)). Their claim (p. 18) is that “direct objects in Swahili may move string-vacuously to SPEC, VP, triggering agreement. The movement is licit since they may receive case in that position.” That the object can optionally move for Case reasons is contrary to the assumptions of the minimalist program, which states that Case may be invoked as a motivation for A-movement, but that optionality of movement can receive an explanation only in terms of the principle of Greed: a category may move only to satisfy its own needs (cf. Chomsky 1992: 47).

(4) mwanafunzi a-ni-(vi)-soma vitabu
    1student 1Sagr-pres-8O Agr-read 8book
    'The/a student is reading a/the books'

Lacking a clear statement of the conditions under which Case is assigned (or, alternately, checked), it is impossible to formulate a satisfactory analysis of optional object agreement in Swahili. One advantage of the minimalist program is that these conditions are clear: objective Case is assigned in a Spec-head relation in an agreement phrase immediately
dominating the verbal projection, and optionality can be expressed as the presence or absence of strong morphological features which must be checked and eliminated before the branching of the derivation to the two external interfaces PF and LF.\textsuperscript{2}

One last unresolved problem for this analysis is raised by example (5, C \& K's (26)), from Kilega, a Bantu language of Eastern Zaïre.

(5) Bililo á-ku-kít-aga búbo  
1agr-KU-do-hab 14that  
'Bililo always/usually does that'\textsuperscript{3}

The structure of (5) is given in (6). I follow C \& K in assuming that both the progressive marker \textit{ku} and the frequentative marker \textit{ag} are generated in Aspectual Phrases within the extended verbal projection (cf. C \& K's (32)).

\textsuperscript{2} Of course, this somewhat glib solution to the problem of the optionality of movement only pushes the problem out of the syntax proper and into the lexicon, or into the domain where the universal or language-specific constraints on feature systems are specified. This is a serious issue, and a challenge to future research that will have to be answered eventually.

\textsuperscript{3} C \& K analyze the morpheme \textit{ku} as expressing the progressive aspect, and \textit{ag} as expressing the sense of habituality or frequency. They are in obligatory co-occurrence.
In all the previous examples we have seen, overt verbal elements heading Aspect or Tense phrases have been the loci of subject agreement triggered by the presence, at some point in the derivation, of a nominal phrase in the specifier of the functional projection. We would like to be able to give a principled account of the reasons for the impossibility of multiple subject agreement morphology in a case such as (5). When the morpheme ku is immediately dominated by an AspP containing a free aspectual marker, it is able to bear subject agreement, as in example (7, C & K's (59a)). Clearly, it does not seem likely that a complex word such as á-ku-kít-aga would bear two or even three subject agreement markers, but what principles exclude this? Needless to say, this is not a problem not only for C & K, but any account of subject agreement facts must provide an explanation of this question.

(7) Bána b-éte bá-ku-lyá mupunga
    2child 2agr-A 2agr-prog-eat 3rice
    'The children are eating rice'

1.2.2. Bahloul & Harbert (1992)

Bahloul & Harbert (1992) (henceforth B & H) propose an analysis of agreement facts in Standard Arabic (SA) from which I will borrow certain
key notions, although I will eventually depart from their proposals in critical respects. Among the aspects of their proposals are the following theoretical assumptions:

(i) as in C & K's proposal, the phrase structure component includes a functional category immediately dominating the verbal projection, which they take to be PredP (cf. Bowers 1993); the subject is base-generated in SpecPred;

(ii) the phrase structure component does not include Agr projections; agreement takes place either in Spec-head relations or under government;

(iii) 'strong' agreement is the spell-out of Spec-head agreement, 'weak' agreement is the result of government of a postverbal noun phrase by its governing verb, or Infl (presumably TP).4

The analysis of a sentence such as (1b), repeated below for convenience, is illustrated in (8). (I have added additional details, such as the base-generation of the object in SpecV, and have omitted speculation on whether SpecT is occupied by a null expletive.) The subject has raised out of SpecPred to SpecAsp, and the verb has raised from $V^0$ through Pred$^0$ to Asp$^0$, blocked from moving further by the presence of the dummy tense-supporting verb $kaan-$ in $T^0$.

(1b) $kaan$-at al-bint-aani ta-ktub-aani darsa-humaa
    was-3FS the-girl-3D 3F-write-D lesson-FD
    'The two girls were writing their lesson'

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4 I will use the terms 'strong' and 'weak' agreement in a somewhat loose sense throughout this discussion; their specific theoretical content will be developed in §2.
The agreement facts exemplified by (1b) are explained as follows: the subject in SpecAsp is in a Spec-head relation to the thematic verb, so feature-checking of all features can take place, giving rise to strong agreement. Since the subject has not raised over the verb *kaan-* in T⁰, but is governed by it (in the sense of local c-command), only weak agreement is possible on the tense-bearing element.

In order to understand the reasons for the attested agreement patterns of Arabic, it is worth examining in greater detail the precise details of the mechanism of agreement under government, as formulated by B & H. Firstly, Spec-head agreement is unproblematic: a noun phrase in the specifier position of a functional category will agree with all features of the head of the functional category. Agreement under government is somewhat more nuanced, and relies on the notion of Projection Systems. Leaving out much detail, the heart of the proposal is that any nested set of phrases is a Projection System, which ultimately terminates in some X⁰ category, the base of the Projection System. When features are checked for purposes of government, only those originating on the base of the Projection System are visible. Thus, when the set of phrases is a nominal DP (DP with NumP complement, and NumP taking an NP complement), the N⁰ head will be the base, and therefore only those features which are inherently specified on the N⁰ head, the relevant one here being gender, are available to the element governing the DP.

This provides an explanation of why only gender (and person) agreement morphology is marked on the verb in the case of a postverbal subject, but other questions arise. For example, in justifying the need for
agreement under government, B & H state that "In (3) [= (1a), repeated below for convenience] gender agreement obtains between kaanat and the postverbal subject even though they have not been in a Spec-Head relation at any point in the derivation." Under the assumptions I will adopt, this is not a valid objection, since the structure and relations of the elements in the overt syntax are not the final outcome of the derivation, but only represent the point at which the derivation has branched to the phonetic interface.

(1a) kaan-at ta-khtub-u al-bint-aani darsa-humaa
    was-3FS 3F-write-S the-girl-3D lesson-FD
  'The two girls were writing their lesson'

I will argue that in sentences such as those in (1a), the subject is indeed in a Spec-head at some point in the derivation relation with all of the verbal elements with which it agrees. Furthermore, this view of S-Structure relations as in some sense representing the final state of the derivation leads B & H to explain the presence of gender and person agreement features on the auxiliary kaan- in T₀ as having been passed up from the thematic verb to the auxiliary through government by T₀ of the verb (cf. Chomsky 1992, fn. 52 for a critique of the apparatus of passing features that encode a structural relationship as though they were entities in their own right).⁵

⁵ A reviewer raises two related points, which call for a principled explanation under the assumptions of B & H's treatment of agreement facts in SA. The first relates to the absence of gender agreement with the auxiliary verb in participial constructions in languages such as French; i.e., sentences like Marie est allée à Paris. The reviewer asks: "if Aux is able to receive gender features from the thematic verb by percolation, what is to prevent the auxiliary from receiving the gender features of the object?" The second question likewise concerns the domain of percolation of features, in particular why it is that in Swahili (cf. (4)) only V → T allows agreement with both arguments of the verb, whereas in many other languages the auxiliary only agrees with the subject. Assuming that movement of the object to SpecAgr₀ takes place universally at some point in the derivation, the simplest solution to the second question is that object agreement is present but receives no overt spell-out in the phonological component. With regard to the first question, a solution suggests itself in the form in which B & H state the conditions of feature-passing; since the object features marked on the participle do not originate in the base of the verbal projection system (V₀), they are unavailable to be passed up to the auxiliary.
A further and related objection can be raised with regard to the mechanical details of the passing upwards of Φ-features from the base of a Projection System: although the specific details of the processes by which such features are made manifest at the maximal phrasal level are unclear under anyone's theory, this seems to introduce a degree of complexity which can be avoided, if other well-motivated assumptions are followed. We will see a related problem in §2.4 when considering the unusual behaviour of agreement with conjoined DP subjects.

Finally, although the analysis offered by B & H does account for the facts of agreement, there is still no clear account of the motivation for A-movement of the subject. Why should the subject stay in situ in one case, move to between the tense-bearing dummy verb and the aspectual thematic verb in another case, and move all the way up to the left of both verbs in another case? I hope to offer a unified explanation of both the motivation for movement and the agreement and word-order facts that result from such movement.

2. A minimalist approach to multiple agreement

Before moving into the details of the analysis of these agreement facts, it might be worthwhile to point out what the issues are, in terms of the Minimalist proposals. What begs for explanation is the nature and motivation of the A-movement that is taking place in SA; the subject in sentences of this kind is able either to stay in situ (I will assume that this means SpecV), to raise to an intermediate position between the auxiliary kaan- in T₀ (or Agr₀; cf. §2.3) and the thematic verb in Asp₀, or to move all the way up to a position above the auxiliary. I will attempt to explain this in terms of motivations for movement and notions of Economy of Derivation. I assume that the phrase structure of the two languages is as given in (9). The parentheses surrounding AspP are to indicate that it is not obligatorily present.
In order for a derivation to be well-formed, it must converge at PF and LF; in other words, it must meet the interface conditions of well-formedness at both LF and PF, which conditions are defined in terms of the legitimate objects which can appear at either of these levels. Thus the individual links of all movement chains at LF must respect (or must have respected, when formed) the version of minimality proposed in Chomsky (1992), and the objects at PF must be the proper objects which can feed the articulatory-perceptual system. Beyond these requirements on what may appear at the two interface levels are general conditions on Economy of Derivation, such as Procrastinate, which states that any operation which can be put off until LF must be put off, and Last Resort, which states that movement of any element takes place only to satisfy the morphological requirements of that element. The interplay between the needs of the two interface levels is the source of many of the operations which must take place in the overt syntax; for example, Case-checking may take place overtly in order to prevent strong morphological Case features from surviving into PF, where they constitute illegitimate objects which will cause the derivation to crash. The generalization which is important is that strong morphological features of functional heads drive movement in the overt syntax; any movement which can be postponed until LF must be so postponed. We will see that this has direct consequences for the question
of subject agreement in SA.

In the cases under consideration, we must explain why in certain cases the subject is forced to move overtly, and in others why there is no pressure on it to move overtly. In all cases, the assumption is that by LF, the subject must have moved up to SpecAgrsP for checking of all features; since this is clearly not necessary in the overt syntax (cf. (1a, b)), we may assume that the morphological Case features of the subject are weak, and can survive into PF, where they are either deleted or invisible to PF operations (cf. Chomsky 1992: fn. 37), and do not cause the derivation to crash. If Case is not available as the motivation of overt subject movement (as, for example, it seems to be in English), we must seek elsewhere for the requirements of the subject that must be satisfied before the derivation branches off to PF.

Under the minimalist proposals of Chomsky (1992: 38-45), the mechanism of Φ-feature checking takes place as follows: functional heads (F₀) such as Agrs₀ are specified with two sets of feature matrices: N-features and V-features. The V-features are checked off against the features of the verbal head which must ultimately adjoin to F₀, after raising cyclically through the intervening head positions. The N-features are checked off against the noun features of the DP subject which, by LF at the latest, must raise to be in a Spec-head relation with F₀. Strong features must be checked before SPELL-OUT, for reasons discussed above. Note also that this checking theory is explicitly a theory of matching features of functional heads against the features of lexical items which have been inserted fully inflected from the lexicon; the pieces of inflection are no longer assumed to be lexically inserted and morphologically concatenated in the process of verb movement.⁶

Jonas & Bobaljik (1992) discuss the typology of word-order facts arising from the specification of the N-features of F₀, using the strength of these features as the explanation of such effects as obligatory preverbal

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⁶ Although not discussed by Chomsky, the relations between the V-features and N-features of any F₀ must clearly obey certain morphological principles, some of which must be specified by UG, some of which must be language-specific; we do not expect to allow Agrs₀ in English, for example, to be specifiable as agreeing with a third person plural noun but a singular verb, allowing a sentence such as *The trains flies off the tracks. This is obviously an area of interest to the theories of the interface conditions between the lexicon and the syntax, and although it is not my intention to develop answers to all of the questions raised by such considerations, I will make use of the notion of the lexical conditions on well-formed F₀ feature specifications to provide a solution to some SA agreement facts.
subject (i.e., the EPP) and object shift (overt object movement out of the VP). Briefly, the explanation is as follows: if the N-features of $T^0$ are strong, they must be checked off by SPELL-OUT in order that the derivation will converge at PF. These features can be checked off in one of two ways: (i) the subject must move overtly to SpecT, checking its features there, or (ii) $T^0$ may raise and adjoin to Agr$_s^0$, and the subject will raise directly to SpecAgr$_s^0$ to check its features against the features in $T^0$. Since a language which licenses SpecT as a landing site in the overt syntax also licenses object shift, they conclude that English and French, and other languages which have an overt preverbal subject, must check N-features against $T^0$ adjoined to Agr$_s^0$, and languages such as Icelandic, which exhibit object shift, must check the N-features of the subject directly against $T^0$, thus providing the possibility for the subject to surface in one of two positions overtly (SpecT or SpecAgr$_s$).

An immediate problem becomes evident if we consider the facts of SA, in which the subject is clearly not constrained to move overtly. In a sentence such as (1a) the subject has not raised overtly, but in a sentence such as (1c) the subject has raised to the left of both the thematic aspectual verb and the tensed auxiliary. How can we provide an explanation of this variable behaviour? We can always fall back on notions of optionality, stipulating merely that the N-features of $T^0$ can be either weak or strong, but this will clearly not do as a principled explanation of the observed facts. An approach to a solution of this problem is suggested by the facts of the co-occurrences between the position of the subject and the nature of the verbal inflection: the subject always appears (somewhere) to the left of any verbal head bearing 'strong' agreement features. The verbal features, which are always strong, and which thus compel movement of the subject to the specifier position of the projection headed by the verb, appear to be the number features dual and plural.\footnote{I must take care to point out that there is some optionality of subject raising with respect to verbs marked with singular number. The following two sentences are both acceptable:}

(i) a. qatała-a  al-kalb-u  al-qīṭāt-a
   killed-3MS  the.dog-3MS  the.cat-MP
   'The dog killed the cats'

   b. al-kalb-u  qatała-a  al-qīṭāt-a
      the.dog-3MS  killed-3MS  the.cat-MP

It seems likely that the N-features dual and plural are obligatorily strong, whereas singular is only optionally strong. This does not seem to be such an unwelcome outcome, since this optionality is lexical; the selection of
2.1. The lexical specification of N-feature strength

Since the strength of the N-features of AgrS⁰ (and, by assumption, of any F⁰ of a projection in which subject agreement can be checked) is dependent on the value of the verbal number features of F⁰, I propose the following condition on the feature content of any such F⁰. This may be considered to be a statement of lexical redundancy, applying as a well-formedness condition on a particular category of lexical item, along the lines of Jackendoff's (1975) lexical redundancy rules:

(10) Condition on Strength of Number Features (CSNF)

The N-features of an agreement-checking F_{Agr}⁰, F_{Agr}⁰ either T⁰ or Asp⁰, are dependent on the V-features of F_{Agr}⁰ as follows, where Num_V indicates the V-feature specification of number in F_{Agr}⁰ and Num_N the N-feature specification:

(i) when Num_V is [plural] or [dual], Num_N is obligatorily strong and agrees in the value of the feature;

(ii) when Num_V is [singular], it is only optionally strong. If strong, Num_N is strong and agrees in the value of the feature; if weak, Num_N is weak, and the value of Num_N is unspecified.

If we assume that the V-features of AgrS⁰ (and Asp⁰, when present) are always strong, thus forcing overt head-movement of the thematic verb from V⁰ through AgrO⁰ to AgrS⁰, we have the beginning of an explanation of these agreement facts. Presumably, morphological properties of verbal inflection in SA can be invoked to explain the fact that when the thematic verb is marked aspectually, it can raise no further than Asp⁰. The logical assumption is that the features of the thematic verb can be fully satisfied by raising to Asp⁰; thus we can simply extend the principle of Last Resort to head movement as well as to A-movement. Once the (strong) features of Asp⁰ have been checked against the features of the verb, there is no motivation for the verb to raise further, necessitating insertion of the auxiliary \textit{kaan-} to check the tense features of T⁰ and the strong V-features of AgrS⁰.

To recapitulate the assumptions of this analysis:

\textbf{AgrS}⁰ marked with the singular number feature allows for the N-feature of \textbf{AgrS}⁰ to be either strong or weak. The syntactic consequences follow automatically, with no optionality in the syntax, the domain of principles of Economy of Derivation.
(11) (i) the weak Case feature Nominative is checked in Agr$_S$P against the raised V$^0$ complex, including T$^0$ (or against the dummy tense-supporting element inserted into T$^0$ and subsequently raised to Agr$_S$P); 
(ii) subject agreement features are checked in AspP (when present) and TP overtly (in the case of ‘strong’ agreement (i.e., dual, plural, or optionally strong singular agreement), and at LF in the case of ‘weak’ agreement; 
(iii) the V-features of Asp$^0$ (when present) and T$^0$ are always strong, forcing verb movement to T$^0$ in the absence of aspectual marking on V$^0$, or movement to Asp$^0$ and dummy insertion into T$^0$ in the case that both tense and aspect markings cannot be borne by the verb. 
(iv) the CSNF applies in the lexicon, prior to insertion of the F$_{Agr}^0$ categories T$^0$ and Asp$^0$; any violation of the CSNF will cause a derivation to fail to converge.

Let us see how the interplay of these principles rules out the two ungrammatical structures given below in (12a-b; examples of corresponding sentences in (13a-b)). For FP, read F$_{Agr}P$; I use -Num solely as an expository device to indicate the presence of a weak number agreement feature, and +Num for a strong feature.

(12) (a) 
```
  FP
    |--- F'
      |--- F
        -Num
      DP
```

(b) 
```
  FP
    |--- F'
      |--- F
        +Num
      XP
        |--- X'  
      DP
```

(13) a. *al-walad-aani qaraʔ-a aš-sabaʔah
the.boy-3MD read-3MS the.newspaper
‘The two boys read (past) the newspaper’

b. *qaraʔ-aa al-walad-aani aš-sabaʔah
read-3MD the.boy-3MD the.newspaper

The sentence (13a) is ruled out by the CSNF. Since the Num$_V$ is [singular], it can be either weak or strong. If weak, Num$_N$ will be weak, and
movement of the subject to the specifier of the functional position whose head is occupied by the verbal element is ruled out by Last Resort: this movement can be put off until LF, and thus must be put off. If, on the other hand, Num$_V$ is strong, Num$_N$ will be strong, and (13a) will be ruled out due to the clash of features that will obtain between Num$_V$ and Num$_N$. Sentence (13b) is likewise ruled out by the CSNF, since strong Num$_V$ entails strong Num$_N$; the failure of the DP to raise to check off this feature will result in a derivation which will crash at PF.\footnote{I am indebted to an anonymous reviewer for comments that led to a clarification of this section.}

2.2. Why not strong Num$_V$ over weak Num$_V$?

One problem, not addressed by Bahloul & Harbert, is raised by the need to rule out a structure such as (14), in which subject agreement is manifested on a higher verbal element but not on a lower one.

(14) *[$\text{AgrSP} [\text{TP al-bintaani}_S [\text{kaanataa} [\text{AspP} [\text{taktubu}_V [\text{AgrOP} [t'_V [\text{VP t}_S [t_V \text{ darsahumaag}]]])])]])]

Under the terms of our analysis, if Asp$^0$ is not being marked with strong Num$_V$, then by the CSNF Num$_N$ is weak and its value is unspecified. Thus, by general principles of Economy of Derivation, the subject should not need to stop in SpecAsp on its way to check the strong Num$_N$ in $T^0$. What then rules out this derivation? Molly Diesing (p.c.) suggests that the relation of c-command holding between the two verbal heads might be invoked as a means of describing the structural relation between them in order to construct a constraint to the effect that no verb bearing singular number agreement can be c-commanded by another verb bearing non-singular agreement. Although this covers the facts in a descriptive manner, it remains to be explained why a constraint of this kind should hold. I offer no explanation here, but leave this for future research.

2.3. Transitive expletive constructions (TECs) (and object shift?)

2.3.1. TECs

Jonas & Bobaljik (1992) point out that a theoretically necessary consequence of the strong N-features of $T^0$ in languages like Icelandic, which exhibit overt object shift, is that SpecT must be available as a landing site for movement of the subject; otherwise, the unavailability of SpecT at LF will trap the subject in the VP. Although at LF the object might raise to SpecAgr$_O$, there will be no chain of verb movement with
respect to which SpecAgr would be equidistant to any available landing site for
the subject. Given what we have seen so far, we predict that in those cases
in which SpecT is licensed as a landing site in the overt syntax, i.e. when
strong Num_V entails strong Num_N, we should find sentences in which the
position of the subject at SPELL-OUT is indisputably SpecT. Given the
enormous difficulty of sorting out the adverb placement facts in Arabic
(cf. Fassi Fehri 1993: 71-75), it is often difficult to know if the subject is in
SpecAgr or SpecT. I have been assuming that the V-features of T^0 are
strong, and thus that the verb must have raised only as far as this position
by SPELL-OUT; this predicts that we ought to be able to detect the
position of the subject by testing for the possibility of a TP adverb which
should be able to intervene between the subject and verb if the former is
in SpecT, but not if it is SpecAgr.

In fact, there seems to be evidence indicating that the subject is in
SpecAgr when definite, and only in SpecT when indefinite. There is a
general and strong ban on sentence-initial indefinites in SA. The sentence
in (15a) is bad, but can apparently be the presence of the sentence-initial
semantically null expletive hunaaka.

(15) a. *rajul-aani daxal-aa makaatib-a-humaa
     man-3MD enter-3MD office.pl-acc-3D
     'The two men entered their offices'

     b. hunaaka rajul-aani daxal-aa makaatib-a-humaa
        there man-3MD enter-3MD office.pl-acc-3D
        'There entered the two men their offices'

The explanation of these and other related facts falls out rather nicely
from the assumptions I have made until this point, but necessitate an
additional assumption. The structure of the transitive expletive
construction (TEC) sentence (15b) is given in (16) below. Since, by
assumption, Num_V of T^0 is strong, therefore Num_N is also strong, and the
subject must raise by SPELL-OUT to SpecT check this strong feature.
However, since it is an indefinite subject, it is unable to raise further.9

9 I am not in a position to offer a satisfactory explanation of this
restriction on the movement of indefinite subjects, although within this
framework the natural type of explanation to seek would be one based on
the principle of Last Resort; if definiteness/ indefiniteness is also an N-
feature, we could posit that the value [indefinite] must be checked in
SpecT, and that once checked, the subject cannot raise to SpecAgr. In
order to make this consistent with the principles of Economy of
Derivation sketched out in Chomsky (1992), we would need to show that
However, given all that has gone before, we might expect this derivation to converge: strong Num\textsubscript{V} and Num\textsubscript{N} in T\textsuperscript{0} have been checked, so by Last Resort, there should be no need for any further steps in the derivation.

(16)

We have assumed all along that the N-feature for nominative Case-checking is weak under all circumstances, but given the TEC facts, it seems that a revision of this assumption is order. Note that we are in more or less the same situation with regard to the determination of the strength/weakness of this feature as we were in the case of the N-features of agreement in functional categories. SA appears to be in between French/English-type languages and Celtic languages, in the sense that the strengths of the various N-features is not invariant and depend instead on the nature of other features, in particular the V-features of the F_{Agr}^0 heads. I thus propose one further change to subcase (i) of the CSNF (10), and consequently also to subcase (i) of the theoretical assumptions laid out in (11). The revised CSNF reads as follows; since it is now a condition on all \Phi-features bearing on Case and subject agreement, it has been renamed accordingly:

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it is more economical in such a case to insert the semantically null expletive than to raise the subject to check Case. I leave this as an open question.
(17) **Condition on Strength of Features (CSF)**

The N-features of an agreement-checking \( F_{Agr}^0 \), \( F_{Agr}^0 \) either \( T^0 \) or Asp\(^0 \), as well as the N-features of the Case-assigning \( F_{Agr}^0 \) \( Agr_S^0 \) are dependent on the V-features of \( F_{Agr}^0 \) as follows:

(i) when \( Num_V \) is [plural] or [dual], \( Num_N \) and Case\(_N\) (in \( Agr_S^0 \)) are obligatorily strong; \( Num_N \) agrees in the value of the feature \( Num_V \);

(ii) when \( Num_V \) is [singular], it is only optionally strong. If strong, \( Num_N \) and Case\(_N\) (in \( Agr_S^0 \)) are strong; \( Num_N \) agrees in the value of the feature \( Num_V \); if weak, \( Num_N \) and Case\(_N\) are weak, and the value of \( Num_N \) is unspecified.

The revised version of subcase (i) of the assumptions in (11) now reads as follows:

(11) (i) \( \) the Case feature Nominative is checked in \( Agr_S^0 \) against the raised \( V^0 \) complex, including \( T^0 \), either overtly or at LF;

The mechanisms are now all in place for an explanation of the TEC facts in SA. Since \( Num_V \) is strong, \( Num_N \) and Case\(_N\) are strong. The inability of the indefinite subject to raise further, in the presence of strong Case features in \( Agr_S^0 \) creates a clash between (presumably) Last Resort and Greed which can be resolved only through the insertion of the expletive to check Case. At LF, as usual, this expletive will be the site of adjunction of the semantically contentful DP subject (expletive replacement; cf. Chomsky 1992, Chomsky & Lasnik 1991). Thus the only function of the expletive is to save the derivation from crashing; this is not a violation of Greed, since the expletive is a member of the A-chain of the subject at LF, and thus the subject is intervening on its own behalf, so to speak.

There are tangible consequences of this reworking of the principles of subject agreement. If it is the case that the raised subject in a TEC is in Spec\(_T\), that the subject in a normal transitive sentence is in Spec\(_{Agr_S} \), and that the verb in both types of constructions is in \( T^0 \), we predict that there should be cases where an adverb may be placed between the subject and verb in transitive sentences but not in TECs. Although the facts are not as clear as one would like them to be, the following seems to be the case:\(^{10}\)

\(^{10}\) Fassi-Fehri (1993: 73) considers transitive SVO sentences with ‘\( aadatan \) ‘usually’ placed immediately before the verb to be outright ungrammatical:
(18) a. ʔal-walad-u ʕaadatan ya-ktub-u dars-a-hu
    the-boy-Nom usually 3M-write-S lesson-Acc-3S
    ‘The boy usually wrote his lesson’

    b. hunaaka walad-u ya-ktub-u dars-a-hu
    there the-boy-Nom 3M-write-S lesson-Acc-3S
    ‘There wrote a boy his lesson’

    c. *hunaaka ʕaadatan walad-u ya-ktub-u dars-a-hu
    there usually the-boy-Nom 3M-write-S lesson-Acc-3S
    ‘There usually wrote a boy his lesson’

In a transitive sentence, sentence-initial *hunaaka* can only indicate the location of the action expressed by the verb, thus functioning (like English *there*) as a locative prepositional:

(19) hunaaka al-walad-u ʕaadatan ya-ktub-u dars-a-hu
    the-boy-Nom usually 3M-write-S lesson-Acc-3S
    ‘The boy usually wrote his lesson there’
    *‘There usually wrote the boy his lesson’ (TEC)

This lends further support to the analysis of nominative Case-checking in Agr<sub>0</sub>, since if the expletive were able to occupy SpecAgr<sub>5</sub> before SPELL-OUT, we would expect the TEC reading of (19) to be available.

### 2.3.2. Object shift in Standard Arabic?

As far as the facts of object shift (OS) go, they are difficult to determine, due to the difficulty of ascertaining the precise positions of adverbs in SA. It is not my intention here, by any means, to undertake a full investigation of OS, but I would like to point out some of the predictions concerning OS that fall out of the analysis proposed in this discussion, and offer an

(i) *l-fuqahaa?-u ʕaadatan y-aqul-uu-na maa laa
    the-scholars-Nom usually 3-say-pl.m. what not
    y-affal-uu-na
    3-do-pl.m.-indic
    ‘Religious scientists usually say what they do not do’

Maher Bahloul (p.c.) informs me that, for him, these are only somewhat marked, in contrast to the TECs with this adverb between the expletive and the verb, which he finds to be highly marked, verging on ungrammatical. As mentioned earlier, the facts of adverb placement in SA are problematic, but the contrast between (18a, c) is illustrative.
unusual fact that I will leave unexplained.

Jonas & Bobaljik (1992) note that there are three conditions on the capacity of a language to exhibit OS:

(A) SpecT is available as a landing site for movement of the subject in the overt syntax;
(B) the verb must raise overtly at least as far as AgrO;
(C) the N-features of T⁰ are strong.

Condition A entails that, even in languages with overt verb-raising such as French, the object cannot raise before LF, since SpecT is by assumption unavailable and the subject will be unable to raise over the shifted object to the specifier position immediately above—and equidistant to—SpecAgrO. Condition B, otherwise known as Holmberg's generalization (cf. Holmberg 1986), is the essential precondition of the creation of the chain of verb movement from V⁰ to AgrO that renders SpecAgrO equidistant to SpecT for subject movement, and Condition C entails the non-availability of SpecT as a landing site for subject raising at LF, which would otherwise rescue the in situ subject in cases where only the object has shifted overtly. The working assumption in Jonas & Bobaljik's discussion of OS and TECs in Icelandic is that languages fall into one category or the other: either they display (the possibility of) object shift (German, Dutch, Yiddish, Frisian, Icelandic), or they do not (English, French).

Under the analysis of SA subject agreement facts developed here, however, things are not as clear-cut. As for Condition A above: under certain conditions, SpecT is available—indeed obligatory—as a target for subject raising, under certain other conditions it is not. As for Condition B: SA is French-type language, insofar as the verb always raises. As for Condition C: sometimes the N-features (i.e. NumN) of T⁰ are strong, sometimes not. The interesting fact is that the satisfaction of conditions A and C converges on the specification of the Φ-features of the F_Agr⁰ heads T⁰ and Asp⁺; i.e., on the necessary lexical specifications of the morphological features of those functional heads which enter into Case- and agreement-checking relations with the subject. According to the CSF (17), when the number feature specification of F_Agr⁰ is strong (dual, plural, or strong singular), NumN of that category will be strong and subject movement will obligatorily take place to SpecF_Agr (Conditions A & C). Obviously, this kind of convergence of surface features of a language onto more general principles is desirable; it seems possible that the same cluster of morphological properties responsible for the co-occurrence of Conditions A and C might also be responsible for Condition B, namely the fact that SA always exhibits overt verb-raising.
The predictions that can be made on the basis of the foregoing discussion are that we should expect to find OS in Arabic only when Jonas & Bobaljik's three conditions are satisfied. Condition B will always be satisfied, so it is the other two convergent conditions which are more pertinent to the variability of OS. Whenever there is lexical insertion of $F^{0}_{Agr}$ with strong Num$_V$ features, all conditions of OS are satisfied; therefore we do not expect OS to be possible when the verb bears weak agreement features, hence has not caused the subject to prepose. Interestingly, this prediction is not borne out, as it takes too simplistic an approach to the complex interplay of the feature specifications responsible for OS.

For Jonas & Bobaljik, OS is ruled out if SpecT is unavailable in the overt syntax, but this is crucially intertwined with their assumption that the N-features of T$^0$ in a language with OS are always strong, and thus must be checked overtly. Since the strength of the N-features of T$^0$ in SA are dependent on the strength of the corresponding V-features, we must consider the case in which these features are weak. Somewhat surprisingly, it turns out that OS is permitted in this case. The derivation is sketched out in (20) below. Let the starting condition of the derivation be lexical insertion of T$^0$ with weak Num$_V$, entailing weak Num$_N$ (by the CSF) and weak Case$_N$. If, for reasons that we have not discussed, the Case$_N$ feature of Agr$_O^0$ is strong, the object will have to raise overtly.

(20)

\[
\text{Agr}_S P \\
\text{Agr}_S' \\
TP \\
T' \\
V \text{ Agr}_O P \\
\text{OB} \text{ Agr}_O' \\
t_V \text{ VP} \\
SU \text{ V'} \\
t_V \text{ t}_{OB}
\]

Under the circumstances discussed by Jonas & Bobaljik, this derivation is
ruled out since the subject will be unable to raise at LF to check the N-features of T⁰, since SpecT will be unavailable as a landing site. If the present assumptions are followed through, however, there is nothing in this derivation that should cause it to fail to converge at LF. Since the N-features of T⁰ are weak, SpecT is still available at LF, and, in contrast to the case of Icelandic, the subject is able to remain in situ overtly, while the object can raise across the subject.

This word order is indeed attested in SA:

(21) a. qatal-a  al-kalb-aani  qiṭ-an  
killed-3MS  the-dog(M)-D  a.cat-Acc
    'The two dogs killed a cat'

b. qatal-a  qiṭ-an  al-kalb-aani  
killed-3MS  a.cat-Acc  the-dog(M)-D

c. al-kalb-aani  qatal-aa  qiṭ-an  
the-dog(M)-D  killed-3MD  a.cat-Acc

d. al-kalb-aani  qiṭ-an  qatal-aa  (object focus reading only)  
the-dog(M)-D  a.cat-Acc  killed-3MD

Sentences (21a, c) need no further comment, since they are simply cases of weak verbal agreement with subject in situ and strong agreement with subject in SpecT respectively. (21b) is of particular interest, since it is the sentence predicted by the discussion above. It is clear that the object has shifted leftwards over the subject; SA is, in this regard, somewhat more forgiving than languages such as Icelandic, which exhibit OS only in conjunction with a raised subject, necessitating complex adverb placement facts to determine the precise position of the subject.¹¹ Under the assumptions of the minimalist program, the only site for object movement is SpecAgrO, thus the unexpected prediction of the analysis is borne out.

Somewhat less easily explained is (21d), in which the object intervenes between the subject and the verb bearing strong agreement features. By hypothesis, the subject and the verb are both in TP. Where, then, is the object? I have no ready explanation of this unexpected fact, but leave it as

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¹¹ An immediate objection that could be raised against this analysis is that the subject has extraposed rightwards, but according to my informants there is nothing marked about this sentence, in terms of focus or presupposition, unlike the problematic case (21d), which they interpreted as placing strong focus on the object. Clearly this is yet another avenue of further research opened up by this discussion.
a problem to be addressed by future research.

To sum up: given a language with strong V-features of $T^0$, the conjunction of the availability of SpecT in the overt syntax and the presence of strong N-features of $T^0$ jointly entail the potential for OS and TEC sentences, and the non-availability of SpecT entails their impossibility, even when the N-features of $T^0$ are strong. This would predict that, in a language with variably strong and weak N-features in $T^0$, OS and TECs should be attested when the N-features of $T^0$ are strong, and unattested when these features are weak. I have demonstrated that this is not the case in SA; in fact, the case of overt object shift and covert subject raising, explicitly excluded by the assumptions of Jonas & Bobaljik's analysis, is attested in SA (cf. Jonas & Bobaljik 1993: 73-74). This consequence falls out naturally as a result of an analysis of agreement facts of SA based on the lexical specification of the features of functional heads, as constrained by a fairly simple set of co-occurrence restrictions (CSF).

2.4. A problem: Coordinate DPs

There is one last lingering problem that I will discuss, although the solution here seems farther away than the solution to the main question of explaining the subject agreement facts of SA. The set of problematic facts, as sketched out by Bahloul & Harbert (1992), are the following: when a conjoined DP appears postverbally, gender and number agreement on the verb reflects agreement with the leftmost conjunct, but when the conjoined DP appears preverbally (i.e., with 'strong' agreement features on the verb), the verb reflects agreement with some combination of features. More specifically, the verb in this case agrees with a feature complex that seems to represent a combination of the features of the individual DP conjuncts. For example, when each conjunct is singular, the combined agreement is dual; when it is a case of a conjoined singular and a plural (or dual), agreement is plural. The facts below are B & H's (20a-d):

(22) a. [al-waladu wa al-bintu] xaraj-aa
   the-boy(M) and the-girl(F) left-DM
   'The boy and the girl left'

b. [al-bintu wa al-waladu] xaraj-aa
   the-girl(F) and the-boy(M) left-DM

c. xaraj-at [al-bintu wa al-waladu]
   left-3SF the-girl(F) and the-boy(M)

d. xaraj-a [al-waladu wa al-bintu]
   left-3SM the-boy(M) and the-girl(F)
B & H's analysis of these facts relies on the notion of the Projection System mentioned above, and the characterization of conjoined DPs as in (23, adapted slightly from B & H's (22)); briefly, masculine gender agreement is exhibited in (22a-b) because of a clash between the feature [feminine] originating on the base of the Projection System (i.e., the D^0 head of the complement DP of Conj^0 in (23)) and the feature [masculine] deriving from Spec-head agreement of the head of ConjP and its specifier. This clash between feminine (from the base of the Projection System) and masculine (from Spec-head agreement within ConjP) is resolved as masculine agreement by default. In contrast, agreement is with the first conjunct in (22c-d) because this is the only conjunct minimality-governed by INFL, and the composite masculine feature of ConjP is not available, since it does not originate on the base of the Projection System.

(23)

Under the assumptions of the minimalist program, all agreement must be checked under Spec-head relations, so that we cannot posit two distinct means of checking agreement; the agreement features of a verb with a postverbal subject are not checked in a different way, but merely at a different point in the derivation. This only pushes the same problem into a different realm of explanation: we must explain why overt agreement is with the composite features of the conjoined DP, and agreement at LF is with the leftmost conjunct. A possible solution to this problem, suggested by Chris Collins (p.c.), goes as follows: in the overt syntax, a conjoined DP must raise as one unit to the projection in which agreement checking takes place; when movement is left until LF for reasons of Economy, only the smallest possible XP raises in order to satisfy the Extended Projection Principle. In the case of a conjoined DP, this will necessarily be the NP within the leftmost conjunct. This solution will account neatly for the observed facts, but raises a number of further questions for future
research; in particular, we would hope that it can be demonstrated that there are Economy principles (such as "move the smallest XP consistent with satisfaction of a particular structural constraint") that hold at LF but not in the overt syntax. I leave this as an open question.

3. Summary and conclusions

I have attempted here to sketch a possible minimalist approach to the multiple instantiations of subject agreement seen in SA. This analysis relies generally on the notions of Economy of Derivation, as developed by Chomsky (1991, 1992) and Chomsky & Lasnik (1993), and relies in particular on assumptions regarding the relative costliness of movement in the overt syntax vs. movement at LF, as well as the morphological specification of features of the functional heads entering into Case and agreement relations with the subject. I have tried to lay the foundation of an analysis of languages exhibiting multiple instantiations of subject-verb agreement according to which there must be some aspect of the feature system of the verbal projection which, if not checked off, will render the A-chain of subject movement illicit at LF. Thus, the subject will always be moving in order to satisfy its own needs, in keeping with the principle of self-serving Last Resort (= Greed; cf. Chomsky 1992: 45-47). A principled account of the minimal feature specifications needed to explain the various word order and agreement facts of SA has been shown to have some interesting and not always expected consequences, particularly regarding the analysis of the preconditions for overt object movement. It seems that the anatomy of OS is somewhat more nuanced than it previously appeared, and further research will be necessary to establish a more solid basis for the lexical specification of functional categories.
References


Intransitive Verbs and the Retroherent Feature in Old Italian and Old Spanish Texts

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Verbs such as *arrabbiare* and *vergonnare* in Italian and *arrepentir* and *abstener* in Spanish have been considered in the past as "inherently reflexive" verbs, because they always co-occur with a reflexive clitic. The problem of how to account for such verbs in Romance and other languages has been addressed by many,¹ and in the theory of Relational Grammar the appearance of "inherent clitics" has been explained as the logical effect of a group of intransitive verbs which refuse an initial 1 relation and in which a multiattachment arises through unaccusative advancement. These verbs are called retro unaccusative because they exhibit what is called a retroherent advancement, in which an advancee acquires a higher relation but also retains its former relation. This multiattachment is what produces the reflexive clitic in these verbs:²

(1) Luigi si è arrabbiato
    'Luigi got angry'

It is interesting to note the variation and change that has occurred in this group of intransitive verbs from early to modern Romance; the question under investigation is how and why these verbs have changed. A study of various Old Italian and Old Spanish texts shows that over time the presence or absence of the retro feature in a verb may change easily but the valence of a verb is less likely to change. The class of retro unaccusative verbs is productive, and in early stages of the Romance languages there were more verbs that carried the retro feature. In the texts studied, of the intransitive verbs there was more migration of verbs within the unaccusative class: several verbs either gained or lost the retro feature with time. However, few unergative verbs ever acquired the retro

² Examples (1)-(7) are taken from Rosen 1982.
feature, and historical development reveals little migration of verbs between the unergative and unaccusative classes. This paper will demonstrate some changes in the retro feature of intransitive verbs in the following texts:

**Old Italian texts**

Dolce Stil Novo poets:
- Guido Guinizelli (d. 1276)
- Guido Cavalcanti (d. 1300)
- Cino da Pistoia (1270-1337)
- Lapo Gianni (1298-1328)
- Gianni Alfani

*The Divine Comedy* by Dante Alighieri (1265-1321)
*Canzoniere* of Francesco Petrarca (1304-1374)
*Decameron* by Giovanni Boccaccio (1313-1375)
*Poetry* by Angelo Poliziano (1454-1494)
*Le Rime* of Giovanni Della Casa (1503-1556)

**Old Spanish Texts**

*Poema de Mio Cid* (late 12th century)
*Los Milagros de Nuestra Señora* by Gonzalo de Berceo (13th century)
*Libro de buen amor* by Juan Ruiz (fl. 1343)
*Arcipreste de Talavera* by Alfonso Martínez de Toledo (1398-1460)
*Los Ejercicios Espirituales* by Ignatius of Loyola (1491-1556)
*Fábula de Polyfemo y Galathea, Las soledades*, sonnets of Luis de Góngora y Argote (1561-1627)

**Retro Unaccusative**

The idea of retroherent unaccusative advancement in the framework of Relational Grammar (Rosen 1982) provides an adequate explanation of the phenomenon previously called “inherent clitic.” Some verbs in the Romance languages always occur with a reflexive clitic: *si è arrabbiato, si è vergognato, si è pentito*. Since the nominal does not perform an action on himself, these verbs are not semantically reflexive but have been assumed to be inherently reflexive, meaning that the clitic has no syntactic source but that it occurs as an inherent part of the lexical entry for those verbs. An alternative to this view, the retroherent unaccusative analysis, shows this phenomenon to be the logical result of two co-occurring lexical features and is based on two independently motivated components of Relational Grammar: the Multiattachment hypothesis and the Unaccusative hypothesis.
The multiattachment hypothesis asserts that semantically reflexive clauses have a nominal which heads a 1-arc and an object arc in the initial stratum. In (2) Ugo is multiattached in the initial stratum and the clause is reflexive. The clitic si is the morphological marker of the resolution of a multiattachment in a later stratum:

1,2 P
1 P
(2) Ugo si.difende
‘Ugo defends himself’

The Auxiliary Selection Rule and Unaccusative Hypothesis account for the difference in use of the auxiliaries essere and avere with Italian verbs. Transitive clauses take avere [Ugo ha difeso Eva], and reflexive clauses take essere [Ugo si è difeso], but intransitive verbs show a split between the two Aux’s. It was shown (Perlmutter 1978) that unergative verbs, those that have a 1 and no 2 initially, use avere while unaccusative verbs, those that have a 2 and no 1 in the initial stratum, take essere:

1 P
1 P Cho
(3) Ugo ha esagerato
‘Ugo exaggerated’

2 P
1 P
1 P Cho
(4) La pressione è aumentata
‘The pressure increased’

The Auxiliary Selection Rule for Italian predicts this usage. It states: ‘an Aux is essere if the nominal heading its P-initial 1-arc also heads a 2-arc in the same clause, otherwise avere’. (Rosen and La Faucci 1993) The unergative class and the unaccusative class also contrast in other syntactic ways: in participial absolutes, in participial adjectives, and with the partitive clitic ne. The Aux Selection Rule predicts that essere will be used in clauses with unaccusative advancement, which includes retro unaccusative verbs, because the nominal that advances heads both a 1-arc and a 2-arc.

Contrasts such as the following led to the hypothesis of retroherent unaccusative advancement:

(5) Ugo ha fermato il motore.
‘Ugo stopped the motor’
Ugo ha spento la luce.
‘Ugo turned the light out’

Ugo ha rotto la fune.
‘Ugo broke the rope’

(6)     Il motore si è fermato.
     ‘The motor stopped’

La luce si è spenta.
‘The light went out’

La fune si è rotta.
‘The rope broke’

The nominals in (6) behave like initial 2’s, yet their clauses contain a reflexive clitic. In plain unaccusative advancement as in (4) a nominal acquires a higher relation and loses its former relation. To account for the above contrast retroherent advancement was posited, in which a nominal acquires a higher relation but retains its former relation, and is therefore multiattached, as in (7).

2     P
1, 2.  P
1     P
1     P  Cho
(7)     La fune si è rotta
     ‘The rope broke’

The resolution of this multiattachment explains the presence of a reflexive clitic in these sentences. The verbal property of [+retro] cannot be predicted in individual verbs but must be coded in the lexicon as such.

Unaccusative verbs can be divided into four separate classes determined by the following two features: whether the verb accepts an initial 1, and whether the verb exhibits plain or retro advancement.3 The four classes of unaccusative verbs are the following:

A.      Plain Unaccusative/ Accepts a 1

La pressione è aumentata.
‘The pressure increased’

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Ugo ha aumentato la pressione.  
'Ugo increased the pressure'

B. **Plain Unaccusative/ Refuses a 1**

Eva è impazzita.  
'Eva went crazy'

*Ugo ha impazzito Eva.  
'Ugo drove Eva crazy'

C. **Retro Unaccusative/ Accepts a 1**

Il vigile si è offeso.  
'The cop took offense'

Ugo ha offeso il vigile.  
'Ugo offended the cop'

D. **Retro Unaccusative/ Refuses a 1**

Ugo si è arrabbiato.  
'Ugo got angry'

*Eva ha arrabbiato Ugo.  
'Eva angered Ugo'

Eva si è vergognata.  
'Eva felt ashamed'

*Ugo ha vergognato Eva.  
'Ugo embarrassed Eva'

The "inherent clitic" phenomenon is explained in group D by the co-occurrence of two features, the refusal of an initial 1 in the verb's valence and the presence of the [+retro] feature. Because of these features, the verb always occurs with a reflexive clitic.

Historically there is change in these two features within the unaccusative class; for example, over time a verb may lose or gain the retro feature, or it may lose or gain its ability to accept an initial 1. Therefore, there is much migration among the four groups of unaccusative verbs in the historical development of the Romance languages. However, there is little change in the class of unergative verbs. Specifically, unergative verbs do not normally contain the [+retro] feature, although there are exceptions, nor is there much migration of verbs between the unergative and unaccusative classes. This paper illustrates these facts by studying some intransitive verbs in several Old Italian and
Old Spanish texts dating from the 12th century to the 16th century.

The Retroherent Feature in Early Texts

In studying intransitive verbs in various Old Italian texts, it is evident that few unergative verbs have undergone any change in their valences over time. Most unergative verbs do not have the [+retro] feature nor do they accept an initial 2. Among the verbs we can identify as unergative in the modern language, some that have not changed are the following:

(8) Se voi sentiste come ‘l cor si dole, dentro dal vostro cor voi
tremereste.         (Cavalcanti, XIX 12)
‘If you felt how much the heart aches, in your heart you would

tremble.’

(9) per quel che Beatrice non ha riso.         (Dante, C 21 63)
‘for that which Beatrice didn’t laugh.’

(10) ivi senza pensier’ s’adagia et dorme.         (Petrarca, 50 38)
‘there without thought he lies down and sleeps.’

(11) et io, pien di paura, tremo et taccio.         (Petrarca, 202 8)
‘and I, full of fear, shake and am silent.’

(12) tosto vedremo chi avrà iersera mentito, o tu o io.         (Boccaccio, VI 4 14)
‘s soon we will see who lied yesterday evening, you or me.’

(13) Ma, dimmi: in avarizia hai tu peccato ...?         (Boccaccio, I 1 44)
‘But, tell me: in greed did you sin ...?’

(14) quando ella o dolce parla o dolce ride.         (Poliziano, I 45 8)
‘when she speaks sweetly or laughs sweetly.’

(15) onde talora il cor riposa e tace.         (Della Casa, XLVI 56)
‘where sometimes the heart rests and is silent.’

These examples of unergative verbs show no change in valence. However, some of these same verbs also appear with the [+retro] feature, which is different from current Italian usage and unusual for unergative verbs:

(16) Ella si tace, et di pietà depinta fisso mira pur me.         (Petrarca, 356 9)
‘She is silent, and portrayed as pious she looks fixedly at me.’

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4 The verb ridesi di X occurs in Modern Italian but it requires the di X argument or a corresponding ne.
(17) Il cavaliere di questo *si rise.* (Boccaccio, III 5 29)
‘The knight laughed about this.’

(18) Io *mi taccio,* per vergogna, delle mie sciocchezze. (Boccaccio, X 8 69)
‘I am silent, out of shame, for my stupidity.

(19) non m’intende; quand’ io piango, ella *si ride.*
(Poliziano, BA XXI (9) 10)
‘She doesn’t understand me; when I cry, she laughs.’

It seems, then, that in Old Italian some of these unergative verbs had an optional [+retro] feature. If [+retro] is a feature characteristic of a group of verbs which refuse an initial 1 relation and in which a multiattachment arises through unaccusative advancement, how do we account for such unergative verbs which occur with a reflexive clitic, and therefore contain a multiattachment, but which are not unaccusative? To solve this problem, Addis adopts an antipassive analysis, which means a nominal bearing the 1 relation demotes to 2 and then advances to 1. In a retro antipassive structure, the 1 relation continues into the antipassive stratum, creating the multiattachment necessary to authorize the reflexive clitic, as in (20):

```plaintext
1    P
1,2  P
1    P
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(20) Ella *si tace*
‘She is silent’

In the texts studied these unergative verbs (*tacere, ridere*) occurred without the reflexive clitic most of the time; examples with the clitic were few, except with *tacere* which occurred quite often as a retro verb. Two verbs in modern Italian which are unergative and [+retro], *lamentare* and *vantare*, appeared the same way even in Old Italian:

(21) non *mi vo’ lamentar* di chi ci facce. (Cino da Pistoia, CVI 09)
‘I am not going to lament about who does that.’

(22) Costanza di marito ancor *si vanta.* (Dante, B 7 129)
‘Costanza still boasts a husband.’

(23) e *l rosigninol che dolcemente all’ ombra tutte le notti si lamenta et piange.*
(Petrarca, 10 11)
‘and the nightingale that sweetly laments and cries in the shade every night.’
(24) voi vi potete vantare d' avere la più bella figliuola e la più onesta
...che altro signore. (Boccaccio, II 7 116)
‘you can boast of having the most beautiful and the most honest
daughter ... than other men.’

With the exception of these two verbs, I did not find other unergative verbs which took on the retro feature or which changed valence. One unergative verb in Old Italian that did appear optionally as [+retro], tacere, lost that feature in the modern language. Mostly importantly, none of these verbs migrated into the unaccusative class.

If we study the unaccusative verbs in these texts, we observe more movement and change among the four groups discussed in the first part of this paper. More frequently there is an alternation in the same verb between [-retro] and [+retro] forms used with the same meaning. Therefore, it seems that the retro feature was optional for many unaccusative verbs:

(25) a. Io non mori', e non rimasi vivo. (Dante, A 34 25)
‘I didn’t die, and I didn’t remain alive.’

b. un spirito gentile che le diceva: “Omai guata costei! Se non, tu ti morrai” (Alfani, I 14)
‘a kind soul that told him: “Now look at this woman! If not, you will die.”’

(26) a. non potea rivedere ond’ io mi ’ntrassi. (Dante, B 28 24)
‘He couldn’t see again where I entered.’

b. così intrammo noi per la callaia. (Dante, B 25 7)
‘sO we entered through the passage.’

(27) a. teco sovente a cantar viensi Amore. (Poliziano, I 69 6)
‘Love comes to sing with you often.’

b. E come è così, messere, che il Guardastagno non è venuto?
(Boccaccio, IV 9 14)
‘And how is it, sir, that Guardastagno didn’t come?’

(28) a. Calandrino se ne scese nella corte. (Boccaccio, IX 5 56)
‘Calandrino went down into the courtyard.’

b. Calandrino ... come scese giù, guardò e non vide il porco suo.
(Boccaccio, VIII 6 16)
‘Calandrino ... since he went down, looked and didn’t see his pig.’
(29) a. I conte ... levantosi come più tosto poté della camera e del palagio s’uscì. (Boccaccio, IX 5 56)
   ‘the count ... got up as soon as he could from the room and left the palace.’

b. Come la navicella esce di loco. (Dante, A 17 100)
   ‘As the small ship leaves its place.’

(30) a. parlerai a quei due che ‘nsieme vanno. (Dante, A 5 74)
   ‘I will speak to those two who are going together.’

b. ei che sen va né pensa di sue pene. (Poliziano, I 56 6)
   ‘She who is going doesn’t even think about her difficulties.’

Although andare can occur with a reflexive clitic in modern Italian,\(^5\) the other verbs found in these entries cannot. One can assume, therefore, that many more unaccusative verbs in Old Italian were able to appear with an optional retro feature, and that perhaps these verbs were moving from group B (plain unaccusative/refuses a 1) to group D (retro unaccusative/refuses a 1) at that time. One verb that most frequently appeared as [+retro] in these texts and which never does in modern Italian is partire:

(31) si ch’eo mi partirò tosto da vui. (Pistoia, LXXXI 08)
   ‘if that I will soon leave you.’

(32) Ma poi che vide ch’io non mi partiva. (Dante, A 3 90)
   ‘But after he saw that I wasn’t leaving.’

(33) Ma certo il mio Simon fu in paradiso (onde questa gentil donna si parte). (Petrarca, 77 6)
   ‘But certainly my Simon was in paradise (where that noble woman is leaving).’

(34) Se tu ti parti, senza alcun fallo io m’ucciderò. (Boccaccio, V 7 18)
   ‘If you leave, without fail I will kill myself.’

(35) egli era il doppio più ricco che quando partito s’era. (Boccaccio, II 4 29)
   ‘he was twice as rich as when he had left.’

(36) ma già perch’io mi parta, erma e lontana. (Della Casa, XIV 3)
   ‘but already so that I leave, isolated and far away.’

(37) riva cercando, Amor da me non parte. (Della Casa, XIV 4)
   ‘seeking the shore, Love does not leave me.’

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\(^5\) When reflexive, andare must also have the clitic ne.
As discussed above, *morire* occurs with an optional retro feature in these texts, but in Petrarca it also appears with an optional 1:

(38) et sonmi accorto che questo è 'l colpo di che Amor m' à morto.  
    (Petrarca, 73 90)  
    'and I realized that this is the blow of which Love killed me.'

(39) Morte m' à morto, et sola pò far Morte ch' i' torni a rieder quel viso lieto.  
    (Petrarca, 332 43)  
    'Death killed me, and Death alone can make me return to see again that joyful face.'

In these examples *morire* seems to have changed valence and here accepts an optional 1, changing its meaning to 'kill'. This phenomenon does not occur in the other texts examined.

Verbs which are retro unaccusative and refuse a 1 in modern Italian appear the same in these Old Italian texts. For example, *pentire* and *vergognare* always occur with a reflexive clitic.

(40) Ma *pentomi*, pero che m' ho pensato ch' esto fatto poria portar dannaggio.  
    (Guinizzelli, XVII 12)  
    'But I repent, but that I thought to myself that this fact could bring harm.'

(41) onde sovente di me medesmo meco *mi vergogno*.  
    (Petrarca, 1 11)  
    'where often I am ashamed of myself with myself.'

(42) *te ne penterai* tante volte che tu ne vorrai morire.  
    (Boccaccio, VII 9 26)  
    'You will repent so many times that you will want to die.'

(43) di questa parte *mi vergogno* io di dirvene il vero.  
    (Boccaccio, I 1 37)  
    'of this part I am ashamed to tell you the truth.'

(44) Di queste cittadine *me ne pento*.  
    (Poliziano, BA IX (13), 4)  
    'Of these citizens I repent.'

These two verbs are retro unaccusative in Old Italian and remain that way in modern Italian. There are some retro verbs that occur differently,

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6 This also happens in some Italian dialects in which *morire* accepts an initial 1 (Rosen 1982).

7 Carol Rosen points out the following example of a transitive *pentire* from the 18th century libretto of "Così Fan Tutte": *o ti so pentir con lor* 'or I'll make you sorry and them too.'
however. In the Decameron, arrabbiare, which always occurs with the reflexive clitic in the modern language, does not carry the [+retro] feature:

(45) la donna, che arrabbiava, datovi delle mani, il mandò. (IX 5 62)
    ‘the woman, who was getting angry, having shaken hands, sent
    him away.’

In Dante, arrabbiare even occurs with an optional 1, showing a difference in valence from the modern language:

(46) Dentro c’è l’ una già, se l’ arrabbiate. (Dante, A 30 79)
    ‘Inside there is already the one, if you anger her.’

One can conclude from these examples that there is much more migration of verbs among the groups in the unaccusative class, particularly with respect to the retro feature, than in the unergative class of verbs. The Old Italian of these texts is rich with verbs that contain the [+retro] feature; many of these same verbs are [-retro] in modern Italian. Italian seems to have limited the retro feature to occur almost exclusively with unaccusative verbs in the modern language.

The Old Spanish texts I studied did not show the rich variety that their Italian counterparts did, but rather reflected much of the same usage that occurs in modern Spanish. One common factor shared between the two languages is the lack of change within the unergative class of verbs; these verbs rarely contain the retro feature and they do not normally move to the unaccusative class. The following are some examples:

(47) fablo el rey Don Alfonso y dixo esta razon. (Cid, 14757)
    ‘King Alfonso spoke and said this message.’

(48) por vanas promisiones trabajamos e seruimos. (Ruiz, S 816 -4)
    ‘for vain promises we work and serve.’

(49) vieja dixo la dueña cierto yo non menty. (Ruiz, S 1368 -1)
    ‘the old matron said certainly I didn’t lie.’

(50) aunque comes e duermes de cada día con ella. (Martínez, 258, 4)
    ‘although you eat and sleep every day with her.’

(51) faze como que llora e que solloça. (Martínez, 198, 7)
    ‘He makes as if he’s crying and sobbing.’

(52) saliendo afuera lloró amargamente. (Ignatius, 292)
    ‘going outside he cried bitterly.’
(53) en noche caminais, noche luciente. (Góngora, S12, V13)
‘at night you walk, the night brilliant.’

The few exceptions I found were in Martínez, in which a few unergative verbs occurred with the retro feature:

(54) rruégovos que non querades trabajar vos en querer saber los tiempos. (258, 13)
‘I implore you not to want to strive to find out the times.’

(55) con tus lazos te trabajaste por me cativar. (300, 19)
‘with your traps you tried to capture me.’

(56) la Fortuna comenzó a sonrreýrse. (297, 16)
‘Fortune started to smile.’

(57) !... non me rrio yo! (199, 21)
‘I’m not laughing!’

(58) Comenzó el governador a se rreyr. (281, 1)
‘the governor began to laugh.’

In contrast to the first two entries, trabajar as a retro verb does not occur in modern Spanish.\(^8\) However, the last examples with sonreír and reír are common even in modern Spanish; these two verbs seem to contain an optional retro feature, the presence or absence of which does not change the meaning of the verb. Quejarse is one unergative verb which always co-occurs with a reflexive clitic in modern Spanish and Old Spanish:

(59) aquí veriedes quexar se Yfantes de Carrion. (Cid, 25185)
‘here you would see the young nobles of Carrion complain.’

(60) Si vos non vos quessassedes, yo non me quessaria. (Berceo, 583c)
‘If you didn’t complain, I wouldn’t complain.’

(61) Ella se avía quexado. (Martinez, 93, 29)
‘She had complained.’

(62) están llorando e quexándose de pobreza. (Martinez, 132, 10)
‘They are crying and complaining of poverty.’

(63) Quexaos, señor, o celebrad con ella. (Gongora, S36, V9)
‘Complain, sir, or celebrate with her.’

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\(^8\) According to Corominas this was not unusual in Old Spanish — trabajar could be used reflexively to mean ‘strive, try, obtain.’
The unaccusative verbs show more change and variation than the unergative class, but many of the verbs that have an optional retro feature also do in modern Spanish. For example, there are the following alternations:

(64) a. *vayamos* pora Carrion, aqui mucho detardamos.  
    (Cid, 20016)  
    'let's go toward Carrion, here we delay a lot.'

b. *e yr me* quiero pora Valençia, con afan la gane yo.  
    (Cid, 27448)  
    'and I want to go toward Valencia, with anxiety that I capture it.'

(65) a. El obispo Don Iheronimo adelant *se entraua*.  
    (Cid 12449)  
    'The bishop Jerome entered ahead.'

b. Mio Çid Ruy Diaz por las puertas *entraua*.  
    (Cid, 3726)  
    'My Cid Ruy Diaz entered through the gates.'

(66) a. Sis murió ol mataron no lo sabien iudgar.  
    (BerCEO, 84b)  
    'If he died or they killed him they didn't know how to consider it.'

b. Nadé todo el mar, *morré* enna ribera.  
    (BerCEO, 634d)  
    'I swam the whole sea, I will die on the shore.'

(67) a. Entrada la quaresma *vine me* para Toledo.  
    (Ruiz, S1163 -3)  
    'Lent having begun I came to Toledo.'

b. Commo ladron *veniste* de noche a lo escuro.  
    (Ruiz, S1192 -1)  
    'Like a thief you came at night in the dark.'

(68) a. oy en el alva *partyó* mi marido.  
    (Martínez, 94, 10)  
    'today at dawn my husband left.'

b. nunca su coraçón *se parta* della.  
    (Martínez, 239, 30)  
    'may her heart never leave her.'

(69) a. Judas *se sale* a vender a Xpo.  
    (Ignatius, 289)  
    'Judas leaves to betray Christ.'

b. Aver te ha dios merced e *saldrás* de aqui ayna.  
    (Ruiz, S1168 -4)  
    'God will have mercy on you and you will leave from here quickly.'

(70) a. *Se les apareçe* Jesús.  
    (Ignatius, 305)  
    'Jesus appears to them.'

b. Jesús *aparesçe* a 7 de sus discípulos.  
    (Ignatius, 306)  
    'Jesus appears to 7 of his disciples.'
c. se me aparecerà sancta Maria.
   'Holy Mary will appear to me.'

As previously mentioned there is a great deal of variation in these unaccusative verbs which take an optional retro feature in these entries. Most of the above verbs behave in the same manner in modern Spanish - they can occur with or without retroherent advancement. Some additional verbs which are always retro unaccusative in Spanish are the following:

(71) por que dexamos sus fijas avn no nos repentimos.  (Cid, 26325)
   'so that we leave his daughters we still don’t repent.'

(72) Todo es recabdado si non te repindieres.  (Berceo, 728d)
   'All is assured if you don’t repent.'

(73) Mas en ellos quebraron todas las sus locuras.  (Berceo, 417d)
   'But in them all his follies broke.'

(74) de lo que yo te dixe luego me arrepenty.  (Ruiz, S1368 -3)
   'of what I told you later I repented.'

(75) de todo me arrepiento.  (Martinez, 316, 9)
   'I repent everything.'

(76) arrepentiéndose procure hazer buena vida.  (Ignatius, 172)
   'repenting, try to make a good life.'

The verb arrepentir always contains the retro feature, and in (73) quebrar should be [+retro] but it does not have the reflexive clitic.

Although these texts from Old Spanish show less variation than the Old Italian texts, they reflect a great alternation in the retro feature in the unaccusative class of verbs. What is interesting is that the alternation in these unaccusative verbs continues into modern Spanish where we find such pairs as: ir/irse, venir/venirse, morir/morirse, salir/salirse, etc. After studying these texts, the conclusion one can make is that the retro feature of intransitive verbs was more widespread and productive in the older stages of Italian and Spanish. Many verbs occurred both with and without the reflexive marker of retro unaccusativity; this quality of ‘optional retro’ continues in modern Spanish, but in Italian unaccusative verbs don’t seem to have the same optionality available in the retro feature. For example, Spanish has morir/morirse but Italian does not allow morire/*morirsi.

Of the two features studied, over time the [+retro] feature was more likely to change in intransitive verbs than the valence of the verb. In contrast to the numerous examples that showed variation in the [+retro] feature, only two verbs showed a change in valence in the texts examined:
morire and arrabbiare in Italian. Why is the retro feature more susceptible to change than the valence of a verb? Whereas the valence of a verb corresponds to thematic roles, the retro feature has no semantic correlates. The reflexive clitic in these verbs corresponds to the multiattachment produced by a retroherent advancement and not to a semantically reflexive verb. Therefore, a change in the [+retro] feature of a verb will produce little or no change in its meaning, but a change in a verb’s valence will affect the meaning of that verb: morire ‘to die’ becomes ‘to kill’ when it accepts a 1 relation, as in examples (38)-(39). The retro feature will be more vulnerable to change than valence, as demonstrated in the examples studied here.
References


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