

Multiple Focus Strategies in pro-drop Languages: Evidence from Ellipsis in Spanish

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Abstract. In this paper I use the case of Spanish to argue that language regularities may give rise to multiple strategies for marking focus. In addition to the well-known observation that focus can be marked by word order and intonation, I present experimental results regarding ellipsis that show that overt full DPs in subject position in Spanish are marked as focused. This strategy is linked to a language regularity, namely the availability of silent (*pro*) subjects. In Spanish, there is a preference for *pro* subjects. Overt full DPs are ‘marked’ as subjects, and the presence of overt full DPs is used to indicate focus on the subject (the *pro-drop hypothesis*). I will provide a novel syntactic analysis of the ellipsis structures, discuss discourse licensing conditions and present two experiments that investigate preferences in ellipsis resolution and argue in favor of the *pro-drop hypothesis*. Experiment 1 compares structural preferences for ellipsis resolution across bare argument ellipsis and *replacives*, investigating the role of syntax and the information-structure status of the subject. Experiment 2 compares the resolution of ellipsis with antecedents with overt DP subjects vs *pro* subjects. The paper also establishes links with the processing of ellipsis in other languages.

1. Processing ellipsis and Informational Focus

The grammar of ellipsis relies on focus to relate elliptical structures to their antecedents. The processor makes use of focus-structure to resolve ambiguous ellipsis. This paper investigates the resolution of ambiguous ellipsis structures in Spanish. By studying ellipsis we will be in a privileged position to observe the strategies by which Spanish marks focus. I propose that we need to take into account the *pro-drop* nature of Spanish in order to understand the assignment of focus. I will show that Spanish differs from non-*pro-drop* languages like English and German with respect to focus marking on the subject. In order to discuss the processing of ellipsis and argue for the effects of focus, I will present novel analyses of two reduced constructions in Spanish: *bare argument ellipsis* and *replacives*. I will investigate both the syntax and the discourse licensing conditions for these clause types.

Spanish is a *pro-drop* language. In finite clauses, the subject position can be occupied by a silent pronoun (*pro*). The subject is then phonetically null.¹ There is a preference for omitting overt subjects and the presence of overt subjects is perceived as ‘marked’ (for some discussion regarding the differences between overt and covert pronouns in Romance see e.g. Montalbetti 1984; Carminati 2002; Alonso-Ovalle et al. 2002). In this paper it will be argued that the choice of the ‘marked’ option, i.e. an overt subject instead of a covert one, is used to signal the presence of

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¹The object position in Spanish cannot be occupied by *pro*.

focus. When the processor comes across an overt subject, there is a strong preference to understand that the constituent is focused. This proposal is summarized in the *pro-drop* hypothesis below.

(1) Pro-drop hypothesis: Overt full DPs in subject position are focused.

According to the *pro-drop hypothesis* the processor has a strong preference to understand that full overt DPs in subject position are part of the focus of the sentence. (Notice that this is not the same thing as claiming that the position the subject moves to in the syntax is a focus position.) In claiming that full DPs in subject position are focused, we will be interested in cases of narrow focus, in which focus is marked on the DP itself. Cases of broad focus, in which focus scopes over the whole sentence from a lower object position, will not be informative. Such cases will not tell us anything regarding whether Spanish makes use of the marked status of overt full DP subjects as a strategy to indicate focus.

In this paper I will investigate both the SVO and VOS word orders in Spanish. The main data investigated follow the pattern in (2a-i) and (2b-i) (exemplified with SVO order). In both cases there is a main clause with a continuation which is a reduced structure. The continuations differ with respect to the relative order of the DP and negation. I will argue that the DP-neg cases are cases of bare argument ellipsis and the neg-DP cases are cases of replacives.

(2) a. Bare argument ellipsis

- | | |
|--|-------------------|
| i. La rama golpeó la ventana, la puerta no | |
| the branch hit the window the door neg | |
| ‘The branch hit the window, the door didn’t’ | [Subject reading] |
| ‘The branch hit the window, the branch did not hit the door’ | [Object reading] |

b. Replacives

- | | |
|--|-------------------|
| i. La rama golpeó la ventana, no la puerta | |
| the branch hit the window neg the door | |
| ‘The branch hit the window, the door didn’t’ | [Subject reading] |
| ‘The branch hit the window, the branch did not hit the door’ | [Object reading] |

The sentences in (2) are ambiguous between a *subject reading* (the continuation DP is interpreted as a subject) and an *object reading* (the continuation DP is interpreted as an object). The DP *la puerta* in (2a-i) is the only material spelled out after ellipsis. It is the *remnant*, which has a parallel in the antecedent clause, the correlate. In (2a-i), *la rama* is the antecedent of *la puerta* in the subject reading (the *correlate* of *la puerta*) whereas *la ventana* is the antecedent of *la puerta* in the object reading. I will freely use the same terminology when talking about sentences with replacive structures, (2b-i), although I will argue that in this case we do not actually have ellipsis (cf. Carlson 2002 for English).

I will propose a syntactic analysis for both structures in (2), and provide arguments to show that whereas the continuation in (2a-i) is a case of bare argument ellipsis (an argument remains after ellipsis at the clausal level), the continuation in (2b-i) is a non-clausal constituent, a replacive. This analyses make welcome semantic and pragmatic predictions, borne out by experimental results presented later on. The experimental results in this paper show that a subject reading is much preferred in the case of (2a-i), and both subject and object readings are equally preferred in the case of (2b-i). These results indicate that the subjects in these constructions behave as if they were

narrowly focused from the point of view of processing. The *pro-drop hypothesis*, together with the syntactic analyses argued for in this paper, account for these results.

The study of focus in Spanish has largely been inspired by [Contreras \(1976, 1983\)](#) and [Zu-bizarreta \(1998, 1999\)](#). Those proposals are mainly interested in providing an account of focus in Spanish in terms of word order and intonation. The current proposal adds to the investigation of focus in Spanish by proposing that there are additional strategies at play in identifying focus. It will be argued that word order and intonation are not enough to account for the role of focus in resolving ambiguous ellipsis. By adding the observation that Spanish makes use of marked structures with full overt DPs in subject position to signal focus on the subject, we can shed light on the facts regarding ellipsis. The picture that emerges is that languages may make use of more than one strategy to mark focus (see [Frazier and Clifton Jr. 1998](#); [Carlson et al. 2008](#) for English) and that differences in language regularities may lead to differences in the strategies we observe across languages.

In the rest of the introduction I will clarify some terminology and introduce important concepts. In §1.1 I will spell out the processing assumptions that will be taken for granted later on. In §1.2 I will make explicit the concepts of focus and topic to be considered in this paper. In §1.3 I will give an overview of the organization of the rest of the paper.

1.1 Processing and crosslinguistic implications

This paper will argue that to account for the effects of focus in processing ellipsis in Spanish, we need to pay attention to the pro-drop nature of Spanish. It will be argued that the grammar of ellipsis in Spanish is not different from the grammar of ellipsis in other languages once we take into account the differences in the strategies used to mark focus. In Spanish, as in other languages, the resolution of ellipsis is affected by parallelism ([Carlson, 2002](#)), focus structure (FAH, [Frazier and Clifton Jr. 1998](#)), and general processing constraints favoring ‘least effort’ structures (MCP, [Vincenzi 1991](#)).

[Carlson \(2002\)](#) has shown that parallelism plays a role in the resolution of ellipsis:

- (3) Parallelism Hypothesis: The processor favors analyses in which DPs that share internal properties (have similar, syntactic, prosodic and semantic features) share external properties (appear in similar structural positions within their respective clauses or phrases) and vice versa.

We will see in the discussion of the experimental results that parallelism is also relevant in the resolution of ellipsis in Spanish. As we will see, parallelism together with structural constraints may favor one of the interpretations of an ambiguous ellipsis structure over another. In this paper we will take the MCP ([Vincenzi, 1991](#)) as the guiding principle that favors ‘least effort’ structures:

- (4) Minimal Chain Principle: Avoid postulating unnecessary chain members at Surface-Structure, but do not delay required chain members.

The MCP is an ‘economy’ principle. According to the MCP, the processor has a tendency to avoid unnecessarily complex structures. Complex structures may be unavoidable in order to satisfy grammatical and processing constraints guiding the resolution of ellipsis, like parallelism and focus. The relation between focus structure and the remnant in ellipsis has been articulated by [Frazier and Clifton Jr. \(1998\)](#) in a specific constraint (which may be viewed as the formulation of a parallelism constraint at the level of focus structure):

- (5) Focus Antecedent Hypothesis: The antecedent of the remnant is preferentially focused.

According to the FAH, in resolving ellipsis the processor will always look for a focused element in the antecedent clause to serve as the correlate of the remnant. This constraint will be useful to us since it will allow us to make use of the resolution of ellipsis as a diagnostic for focus placement.

The three principles described above are at work in the resolution of ellipsis in Spanish. However, to account for the resolution of ellipsis it is also necessary to pay attention to language regularities. [Frazier and Clifton Jr. \(1998\)](#), followed up by [Carlson et al. \(2008\)](#), argued that focus marking in English is not only determined by intonation. English has a tendency to place new information towards the end of the sentence. This results in a general object bias in the resolution of ambiguous ellipsis (i.e. the object is more likely to be focused and thus be chosen as the correlate of the remnant).

In this paper I show that in Spanish we do not find an object bias. The differences regarding the strategies of focus assignments with respect to English will be attributed to regularities in Spanish that are not present in English. As we have discussed, Spanish is a pro-drop language and there is a preference to not spell out the subject (spelling out the subject results in a marked structure). We will see that there is a tendency in Spanish to understand overt subjects as focused (Spanish language regularity). The differences between Spanish and English in terms of language regularities and the strategies used to mark focus will account for apparent differences in the grammar of ellipsis resolution.

1.2 Focus as new information

I will appeal to focus as ‘new information’. The focused part of the sentence is the part that presents new information. This is the notion of focus presented in [Lambrecht \(1994\)](#), based on [Bolinger’s \(1954\)](#) notion of *information point* and [Halliday’s \(1967\)](#) notion of focus.

(6) FOCUS:

“[T]he focus of the proposition expressed by a sentence in a given utterance context, is seen as the element of information whereby the presupposition and the assertion DIFFER from each other. The focus is that portion of a proposition which cannot be taken for granted at the time of speech. It is the UNPREDICTABLE or pragmatically NON-RECOVERABLE element in an utterance.”

([Lambrecht, 1994](#), pg. 205)

When I refer to focus as *new information*, I will do so in the above understanding of new information as *unpredictable* and pragmatically NON-RECOVERABLE. That is, I will equate *new information* with information not yet present in the Common Ground ([Stalnaker, 1978b,a, 1998, 1991, 2002](#)).

This notion of focus is not incompatible with other notions of informational focus found in the literature (see [Kiss 1998](#); [Rochemont 1986](#), a.o.), nor with accounts proposing semantic or syntactic theories of focus, and syntactic/phonetic strategies to identify focus (see [Selkirk 1984](#); [Rooth 1985, 1992, 1995, 1996](#); [Büring 1997](#); [Zubizarreta 1998](#); [Schwarzschild 1999](#); [Büring 2003, 2007](#); [Kratzer and Selkirk 2007](#), a.o.). The experiments presented in this paper do not discriminate between more fine grained notions of focus as new information (for different views see [Geurts and van der Sandt 2004](#); [Fox et al. 2001](#); [Jackendoff 1972](#); [Rooth 1985, 1992](#); [Krifka 1991](#); [Schwarzschild 1999](#); [Sauerland 2005](#), a.o).

Given the characterization of focus as new information in (6), we will make a further distinction between cases in which we merely add information to the common ground (the sentence has then ‘plain’ *informational focus*), and cases in which we first remove some assumption from the hearer’s ground and then replace it with new information (the sentence has then *contrastive focus*). This distinction will prove useful in understanding differences in the pragmatic impact of various reduced clauses in Spanish.

Traditionally, questions have been used as a diagnostic for *informational focus*.²

- (7) a. A: What did John buy?/ What did John do?/ What happened?
 B: John bought [beer]_F / John [bought beer]_F / [John bought beer]_F

In the first answer in B, there is focus on *beer*, in the second answer there is focus on *bought beer*, and in the third answer the whole sentence is focused. We will use the term *narrow focus* for cases in which only an argument is focused, and speak freely of broad focus in the other cases.³ Contrastive focus does not introduce new information in the same way informational focus does, and questions do not constitute a good diagnostic. Contrastive focus may mark information that contrasts with previously stated (or implicit) information. One use of contrastive focus is to correct information, (8) (examples from Krifka 2006).

- (8) A: Mary stole the cookie
 B: (No,) [Peter]_F stole the cookie!

B’s utterance in (8) presupposes that the hearer assumes that *Mary stole the cookie*, and corrects it by stating that the only possible alternative is the one uttered (*Peter stole the cookie*). In the experiments carried out in this paper, we will be concerned with both informational and contrastive focus. In all cases, focus will be narrow.

For the sake of completeness, and to clarify terminology, let us note that the notion of focus invoked in this paper is accompanied by a notion of topic understood in terms of *aboutness*, as in Reinhart (1981). The concept of topic argued for in Reinhart (1981) and taken up by other authors (e.g. Lambrecht 1994) is based on Strawson’s (1964) characterization of *aboutness*. The topic of a sentence is identified by the part of the proposition expressed by the sentence that is already part of the common ground, and, crucially, by the communicative intentions: the assertion is intended to expand our information about the topic. Let’s consider the example in (9).

- (9) Earlier in the evening, there was a loud noise and it was immediately clear that something had hit the window. People present at that time are now talking about the events.
 A: La puerta golpeó la ventana
 the door hit the window
 B: (No) La rama golpeó la ventana (, no la puerta)
 neg the branch hit the window neg the door

After A’s utterance in (9), it is understood that something has hit the window, and B’s utterance introduces information that is not recoverable from the common ground: it was the branch, and

²Notice, that Reinhart (1981) already argued that context may affect the interpretation of questions, and thus this diagnostic may not be reliable. We will make use of this diagnostic with caution in the paper.

³Strictly speaking, in the literature broad focus only refers to the case of sentence level focus. But this distinction will not matter here.

not the door, that hit the window. Given the notion of focus and topic relevant here, *la rama* ('the branch') is the focus of the sentence uttered by B because it introduces the information that is not recoverable from the common ground and because the purpose of the utterance is to expand the information about what object hit the window (the topic). Even if *la rama* ('the branch') had been mentioned earlier, in B's utterance in (9) *la rama* is the focus of the sentence. There are other uses of the notions of focus and topic in the literature (e.g. for some authors, all previously mentioned entities are topics), but hopefully there will be no confusion in the rest of the paper.

1.3 Organization

The paper is organized as follows: in §2 I review the processing literature on focus and ellipsis resolution. In §3 I spell out and justify syntactic assumptions: I discuss both SVO word-order (unmarked) and VOS word-order (marked) in Spanish, and contrast two types of reduced clauses as possible continuations: replacives and bare argument ellipsis. In §4 I examine the structures in §3, and spell out the predictions that can be made regarding the resolution of ambiguous ellipsis based on structural considerations and previous processing results. In §5 I report an experiment regarding the processing of the structures introduced in the previous sections. The experimental results confirm the predictions made for the structures introduced in §3. In addition, it is noted that the results go against results reported in the processing literature on English. Following up on these observations, I make a proposal for focus based on the pro-drop option available in Spanish, and use it to explain the cross-linguistic differences observed between English and Spanish, as well as the unexpected focus-processing results. The proposal allows me to maintain that once essential differences between languages are taken into account, the same strategies are at play in both English and Spanish. In §6 I present an experiment designed to test the new hypothesis, which is confirmed. The overall results show that overt full DPs in subject position in Spanish (a pro-drop language) are focused, indicating that intonation and word order are not the only strategies used by Spanish to mark new information. Together, the experiment results reported in §5 and §6 argue for the need to look at focus in different ways and open new avenues for research in this area.

2. Ellipsis processing and focus

Focus plays a role in the grammar of ellipsis (Rooth 1995, 1999). There is also a broad literature showing that focus affects the processing of sentences like (10a) and (10b).

- (10) What did John buy?
a. John bought [BEER]_F
b. # John [BOUGHT]_F beer

The fact that (10b) is perceived as ill-formed as an answer to (10) shows that focus is computed as a normal part of processing of the sentence.

It has been shown that focused constituents are recognized faster in speech (Cutler & Fodor 1979) and fixated longer in reading (Birch & Garsnsey 1997). Also, focused elements appear to be especially salient in memory (Birch & Garnsey 1995, a.o.), and to have an advantage in anaphora resolution (Almor 1999, a.o.). Listeners and readers use focus-marking to determine the information structure of sentences and thus to interpret utterances in relation to the previous discourse and the information in the Common Ground. It has also been shown that utterances in which new or contrastive information is marked as focused using accents (and given material is not

accented) are rated as more acceptable than utterances with inappropriate focus structure (Birch & Clifton 1995).

Focus is also important in ambiguous ellipsis structures. Carlson (2001a,b, 2002) has shown that accent placement influences interpretation in a wide range of ellipsis structures, such as those in (11) (from Carlson 2002).

- (11)
- a. Gapping
 - i. Josh visited Marjorie during vacation and Sarah during the week
 - ... and Sarah [(visited Marjorie) during the week]_{VP} (subject reading)
 - Josh visited [Marjorie during vacation]_{VP} and [Sarah during the week]_{VP} (Object reading)
 - b. Bare argument ellipsis
 - i. Stanley insulted the students during class and Jeff too
 - ... and Jeff [(Insulted the students during class) too]_{VP} (subject reading)
 - Stanley insulted [the students during class]_{VP} and [Jeff too]_{VP} (object reading)
 - c. Comparatives
 - i. Tasha called Bella more often than Sonya
 - ... more often than [Sonya (called Bella)]_{IP} (Subject reading)
 - ... more often than [(Tasha called) Sonya]_{IP} (Object reading)
 - d. Replacives
 - i. Dr. Waters saved Maria from drowning, not Dr Green
 - ... not [Dr Green (saved Maria from drowning)]_{IP} (Subject reading)
 - ... not [(Dr. Waters saved) Dr. Green (from drowning)]_{IP} (Object reading)

Carlson shows that the placement of a L+H* pitch accent on an object or subject influences the resolution of ellipsis in the structures in (11), favoring an object or subject reading respectively: the location of L+H* pitch accents biases the processor towards or against an object analysis. This is consistent with previous work in parallelism in the processing literature, in which it is shown that “parallelism of many types is helpful to the processor” (Carlson 2002: 6). Carlson captures these results with the parallelism hypothesis, (12):

- (12) Parallelism hypothesis: The processor favors analyses in which DPs that share internal properties (have similar, syntactic, prosodic and semantic features) share external properties (appear in similar structural positions within their respective clauses or phrases) and vice versa.

Frazier & Clifton (1998) found that the choice of an antecedent for *who* in sluicing sentences was affected by the position of pitch accents. They found that when the embedded object bore a pitch accent, participants chose the object antecedent answer 72% of the time. However, when the matrix subject was accented, participants chose the subject antecedent answer 52% of the time, and the object antecedent answer only 48% of the time.

These results were taken to mean two things. On the one hand, the results showed that the accenting of a constituent increased the probability that the constituent was chosen as the antecedent of the variable, *who*, by a significant but modest 24% (the difference between the 28% of subject

responses when the subject is not accented and the 52% obtained when the subject is accented). On the other hand, there was also a tendency to take the object as antecedent: even with the accent on the subject, the object reading was still preferred 48% of the time.

For theories of ellipsis based on focus sensitivity (Merchant, 2001, a.o.), the fact that accent affects the interpretation of ellipsis is not surprising. Such theories claim that elided material is always non-focused, or treated as background or given information. The prediction is that the identification of the inner antecedent of a wh-remnant in sluicing sentences will be facilitated by its being focused within the antecedent clause. However, the experimental results in Frazier and Clifton (1998) showed that when the matrix subject was marked as focus instead of the object, the object was still taken as the antecedent for sluicing half of the time. An analysis based only on the most prominent accent (as focus marking) would predict that in such cases the object should seldom if ever be taken as the antecedent.

The object bias found in sluicing reflects a general object bias in English. Speakers of English tend to place new constituents, marked with new information focus, later in the clause. This tendency makes objects and other constituents that appear late in the clause tempting antecedents for ellipsis resolution. They are in a position where we expect to find new information (see Carlson *et al.* 2008 supporting evidence). This proposal is supported by work on focus and information structure, where it has been observed that objects are more likely than subjects to describe new things and give new information (Birner and Ward 1998).

To summarize, Frazier and Clifton (1998) (followed up in Carlson *et al.* 2008) show that listeners do not rely only on pitch accent to determine new information. The processor also relies on regularities in the language. One of the regularities in English is that new information tends to be in the rightmost position, and, thus, constituents in the rightmost position are likely to be focused. These regularities have a strong effect in determining focus.

To conclude, in this section we have seen a number of results that show that focus plays an important role during processing. In examining ellipsis it has been shown that syntax and focus structure are decisive in ambiguous ellipsis resolution. Parallelism and the location of pitch accent are crucial for the processor. We also saw that language regularities, such as the regular location of new information in the clause, have an impact on ellipsis resolution. We would expect these processing findings to be replicated in other languages. The coming sections tested whether the same generalization hold in Spanish.

3. Focus and ellipsis in the context of *replacives* and *bare argument ellipsis* in Spanish

In this paper I will be concerned with sentences like (13).⁴

- (13) a. S(subject) V(erb) O(bject) structures
- i. La rama golpeó la ventana, la puerta no [SVO+DP-neg]
the branch hit the window the door neg
‘The branch hit the window, not the door’
 - ii. La rama golpeó la ventana, no la puerta [SVO+neg-DP]
the branch hit the window neg the door
‘The branch hit the window neg the door’

⁴The translation in English of the sentences in (13) may be misleading. Spanish is a pro-drop language, thus, as we will see later, the presence of an overt subject is meaningful. This is not the case of English, in which subjects are always required to be overt.

- b. V(erb) O(bject) S(ubject) structures
- i. Golpeó la ventana la rama, la puerta no [VOS+DP-neg]
 hit the window the branch the door neg
 ‘The branch hit the window, not the door’
- ii. Golpeó la ventana la rama, no la puerta [VOS+neg-DP]
 hit the window the branch neg the door
 ‘The branch hit the window, neg the door’

There are two word-order patterns in the sentences in (13): the sentences in (13a) are SVO sentences, whereas the sentences in (13b) are VOS sentences.⁵ I will also consider a further variation within these patterns involving the relative order of negation with respect to the DP in the second clause: in the (i) examples negation follows the DP, whereas in the (ii) examples, negation precedes the DP. I will argue below that these two patterns correspond to two different syntactic structures: SVO/VOS + DP-neg is a case of *bare argument ellipsis* and SVO/VOS+neg-DP has a *replacive* structure attached.

The sentences in (13) are potentially ambiguous between a subject and an object reading for the last DP, (14). The ambiguity corresponds to two different ways of resolving the second clause: (i) the remnant is taken to be the subject, (14a), or (ii) the remnant is chosen to be the object, (14b).

- (14) a. The branch hit the window, the door did not hit the window [Subject reading (R_{Sbj})]
 b. The branch hit the window, the branch did not hit the door [Object reading (R_{Obj})]

In this paper I will make use of examples like the ones presented above to investigate the different strategies used by languages to mark focused elements and thus allow them to be the antecedent of the remnant. In the next subsections, I have two main objectives: (i) to introduce and justify the syntactic structures I will make use of in the rest of the paper; and (ii) to present the predictions laid out by these structures. We will see later on that these predictions are not borne out by current approaches to focus in Spanish and that ingredients other than word order and intonation have to be taken into consideration in order to make the right predictions.

⁵VSO order is also possible in Spanish. However, this order is very unnatural and it is only found (besides poetry) in very specific conditions, for example in numerations, (1).

- (1) Compró María un coche, Pedro una bicicleta, y Juan un camión
 bought Maria a car, Peter a bicycle and John a truck
 ‘María bought a car, Peter bought a bicycle, and John bought a truck.’

It has also been argued that in VSO order, the subject cannot be definite, (cf. (2a) and (2b)) (Whitley 1986).

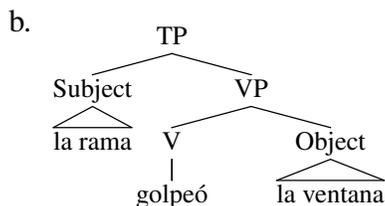
- (2) a. Se ha comido *un niño* la manzana
 cl.3.sg has eaten a kid the apple
 b. *Se ha comido *el niño* la manzana
 cl.3.sg has eaten the kid the apple

Other authors claim that in VSO sentences the subject has to be human, or the object has to be difficult to passivize (Pinedo 1997). What is important for us here, is that VSO order is licensed in very specific conditions, altogether different from those considered in this paper, so we are not considering it here. Given the special character of VSO sentences, their omission in this paper does not put us at risk of missing any important fact.

3.1 Basic assumptions on Sentence structure in Spanish: SVO and VOS

Spanish is a head initial language whose unmarked word order is SVO. Plain declarative sentences like (15a) have the syntactic structure indicated in (15b).

- (15) a. La rama_{subject} golpeó_{verb} la ventana_{object}.
 the branch hit the window

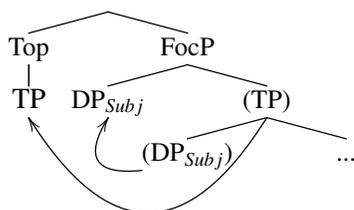


In the simplified syntax in (15b) the subject DP has moved from SpecvP to the specifier of TP in order to check nominative case.⁶

VOS is a marked order in Spanish. I will adopt Lahousse's (2005, 2006, 2007) analysis. Lahousse claims that VOS sentences in Spanish consist of two constituents: (i) the constituent formed by the verb and the object, and (ii) the constituent formed by the subject (cf. Ordóñez 2000, who proposes a scrambling analysis for Spanish VOS sentences).⁷ Observing the properties of the object in VOS sentences in Spanish, as well as the adjuncts and indirect objects, Lahousse argues that these elements cannot have been scrambled independently from each other. Rather, verb and object are part of the same constituent and they move as such.

Lahousse's analysis for VOS sentences in Spanish is sketched in (16).

- (16)



According to the analysis in (16), the DP in the specifier of TP moves to a syntactic focus position. Afterwards, the remaining TP moves to the topic position above, as a whole constituent.

With this basic background in place, let us look at the interaction of these two word orders with neg-DP and DP-neg, and examine the resulting structures. We will use these structures to make predictions regarding the preferred readings of reduced structures investigated in the experiment.

⁶Many authors, like Zubizarreta (1998), assume that the subject in SVO undergoes movement to TP (see Zagana 2002 for discussion). For completeness, I will also note some other options. It has also been proposed that subjects in this configuration are left dislocated (Ordóñez and Treviño 1999). It has also been argued that preverbal subjects in several languages are the result of movement to CP (Barbosa 1995, for Portuguese, Ordóñez and Treviño 1999, for Spanish and Alexiadou and Anagnostopoulou, 1998, for Greek).

⁷Lahousse (2007) argues that in Romance languages the VOS configuration has a specificational meaning and shares syntactic parallels with specificational sentences (e.g. clefts, *It was the branch which hit the window*, and copular sentences, *The thing which hit the window was the branch*). Lahousse draws syntactic parallels between specificational sentences and VOS configurations. Lahousse claims that, like specificational sentences, VOS sentences in Spanish consist of two constituents and that VOS sentences exhibit the same connectivity effects observed in specificational sentences with respect to clause-internal phenomena such as reflexivization, the interpretation of anaphora, and coreference between pronominals and NPs. The reader is referred to Lahousse (2007) for details.

3.2 Replacives and bare argument ellipsis

In this section I will present the structures for SVO/VOS+neg-DP, and SVO/VOS+DP-neg. My goal here is simply to show what the syntactic structures are. I will present empirical arguments in favor of these particular structures in the following subsections (§3.2.1 and §3.2.2).

The SVO case is illustrated in (17)-(18).

(17) neg-DP (Replacives)

- a. La rama golpeó la ventana, no la puerta [Replacive]
 the branch hit the window neg the door
 ‘The branch hit the window, the door did not hit the window’ R_{Sbj}
 ‘The branch hit the window, the branch did not hit the door’ R_{Obj}

(18) DP-neg (Bare Argument Ellipsis)

- a. La rama golpeó la ventana, la puerta no [Bare Argument Ellipsis]
 the branch hit the window the door neg
 ‘The branch hit the window, the door did not hit the window’ R_{Sbj}
 ‘The branch hit the window, the branch did not hit the door’ R_{Obj}

I propose that the two sentential patterns in (17) and (18) correspond to two different syntactic structures and give rise to two different types of reduced clauses: replacives vs. bare argument ellipsis ((19a-ii) vs. (19b-ii)).⁸ The key difference is that in the case of replacives all that there is in the second clause is a non-clausal structure (there are no phonologically silent elements, ‘what we see is what we get’), whereas in the case of bare argument ellipsis there is real ellipsis. In cases of bare argument ellipsis there is phonologically silent material that exactly matches the antecedent, but the only thing we hear is the new (focused) material.

The term *replacive* goes back to Drubig (1994). Replacives consist of a narrowly focused element that needs a correlated antecedent in the preceding clause. Replacives can in principle be attached to different levels in the clause. In this section I will present structures where replacives are attached at the TP level. Later on (§6.1.2) we will discuss the possibility of attachment at the object DP level.

The term *bare argument ellipsis* means different things for different people (for example, some authors identify bare argument ellipsis with stripping and some consider them separate phenomena). In this paper bare argument ellipsis refers simply to structures in which everything in the clause that is identical to the corresponding parts of the preceding clause is phonologically silent. Structure with bare argument ellipsis are conjoined to the preceding clause by a proposition-level conjunction.⁹ The condition for bare argument ellipsis is that there must be structural parallelism between the correlate and the remnant. The *given* material is elided (Merchant 2001) and the remnant is focused.

(19) SVO structures

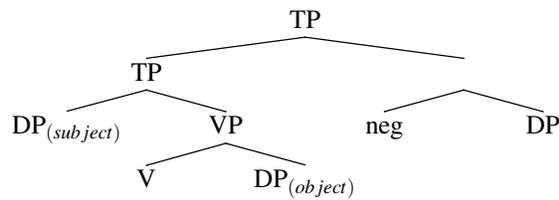
a. neg-DP structures (Replacives)

⁸López (1999) has proposed an analysis of DP-neg, but does not consider the contrast with neg-DP nor the differences in discourse licensing conditions between the two.

⁹We will see many examples of bare argument ellipsis in which the conjunction is silent. Given the negation in the second clause, I assume that this conjunction is most likely a silent *pero* (‘but’).

- i. La rama_{subject} golpeó_{verb} la ventana_{object}, no la puerta
 the branch hit the window neg the door

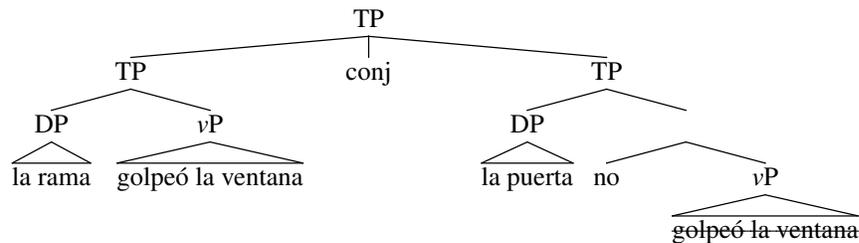
ii.



b. **DP-neg** structures (Bare Argument Ellipsis)

- i. La rama_{subject} golpeó_{verb} la ventana_{object}, la puerta no
 the branch hit the window the door neg

ii.



In (19a-ii) and (19b-ii) I present the basic structures for SVO sentences in Spanish, in which the subject moves to the specifier of TP. In the case of (19a-ii) (neg-DP) we see a replacive attached at the TP level. This structure corresponds to both the subject and object reading of (17a). In the case of (19b-ii) (DP-neg) we have bare argument ellipsis, with two conjoined clauses. This structure corresponds to the subject reading of (18a) (notice that the two conjoined clauses have parallel syntactic structures).¹⁰

Having given an overview of the SVO structures, we will now examine VOS sentences. Consider (20) and (21):

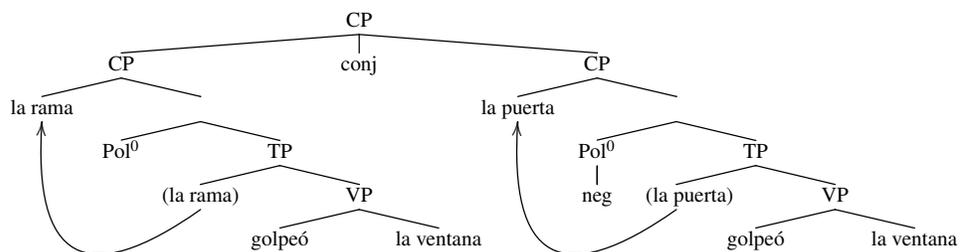
(20) **neg-DP** (Replacives)

- a. Golpeó la ventana la rama, no la puerta
 hit the window the branch neg the door

(21) **DP-neg** (Bare Argument Ellipsis)

¹⁰There is another possibility to get the subject reading by assuming that negation may be above TP instead of between tense and aspect, as in (19b-ii). In this case, the subject should move from the specifier of TP to a position above the polarity head. However, since the basic configuration would remain parallel, this would not be relevant and I will not consider this possibility.

(1)



- a. Golpeó la ventana la rama, la puerta no
hit the window the branch the door neg

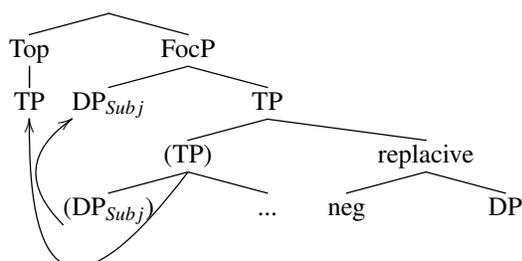
Adopting Lahousse's proposal in (16), the neg-DP and DP-neg patterns in VOS sentences will be analyzed as in (22):

(22) VOS structures

a. **neg-DP Replacives**

- i. Golpeó_{verb} la ventana_{object} la rama_{subject}, no la puerta
hit the window the branch neg the door

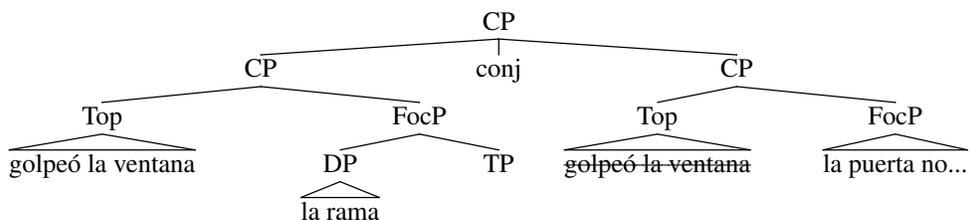
ii.



b. **DP-neg Bare argument ellipsis**

- i. Golpeó_{verb} la ventana_{object} la rama_{subject}, la puerta no
hit the window the branch the door neg

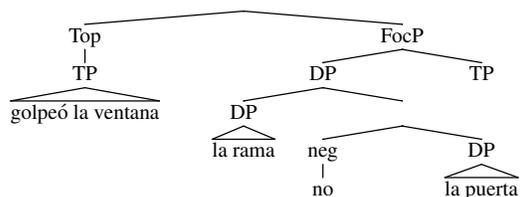
ii.



I am proposing that in VOS sentences, as in SVO sentences, neg-DP structures correspond to replacives, (22a-ii).¹¹ Like in the case of SVO+neg-DP sentences, I assume that there is no silent clausal structure. In the same way, as in the cases of SVO+DP-neg sentences, VOS+DP-neg sentences are cases of bare argument ellipsis, (22b-ii), in which two clauses are coordinated.

¹¹Like in the case of SVO+neg-DP sentences, one could consider attachment of the replacive to the object DP in VOS+neg-DP sentences. The result would be a structure like in (1), where neg-DP forms a constituent together with *la rama* ('the branch'). I will set aside this possibility here, but we'll discuss the option of low replacive attachment in later sections.

(1)



In what follows, I show that the different syntactic analyses given to neg-DP and DP-neg, *replacives* and *bare argument ellipsis* respectively, receive justification on the basis of the different predictions they make regarding adverbial modification and topicalization, §3.2.1, and discourse licensing conditions, §3.2.2.

3.2.1 *Sentential Vs. Non-Sentential remnants*

Given the structures proposed above, there is real ellipsis in the case of bare argument ellipsis, but not in the case of replacives. Thus the remnant in bare argument ellipsis has a clausal status, whereas the remnant in replacives does not. If this difference is real, it should show up when applying syntactic tests designed to differentiate clausal and non-clausal remnants.

If the remnant in bare argument ellipsis is clausal and the remnant in replacives is not, there should be a difference in the distribution of adverbs in the two clauses. Adverbs are licensed as verb modifiers. They should be possible in bare argument ellipsis structures (which are clausal and include a verb), but not in replacive structures (which are non-clausal and do not include a verb). These predictions are borne out, and this is illustrated in (23) for bare argument ellipsis, and in (24) for replacives:¹²

- (23) a. La rama golpeó la ventana (incesantemente), la puerta no
 the branch hit the window (incessantly) the door neg
 b. La rama golpeó la ventana (incesantemente), la puerta no (incesantemente)
 the branch hit the window (incessantly) the door neg (incessantly)
 ‘The branch hit the window incessantly, the door did not hit the window incessantly’_{R_{Sbj}}
 ‘The branch hit the window incessantly, the branch did not hit the door incessantly’_{R_{Obj}}
- (24) a. La rama golpeó la ventana (incesantemente), no la puerta (*incesantemente)
 the branch hit the window (incessantly) neg the door incessantly
 b. La rama golpeó la ventana incessantemente, no (*incesantemente) la puerta
 the branch hit the window incessantly neg incessantly the door

(23b) illustrates that in the case of bare argument ellipsis sentences, DP-neg is part of a larger clausal structure. In the case of (24) there is no evidence of such clausal structure. In fact, it seems that there is no clausal structure at all, since, as (24) illustrates, adverb modification is not possible. However, by itself this test may not be conclusive.¹³ Stronger evidence against the existence of clausal structure in the case of replacives comes from topicalization. Let us look at the contrast between (25) and (26).

- (25) a. Por la mañana, la rama golpeó la ventana, la puerta no
 for the morning the branch hit the window the door neg
 ‘In the morning, the branch hit the window, the door didn’t’_{R_{Sbj}}
 ‘In the morning, the branch hit the window, it did not hit the door’_{R_{Obj}}

¹²In what follows I will abbreviate *object reading* and *subject reading* with R_{Obj} and R_{Sbj} respectively.

¹³It has been shown that sluicing sentences in other languages (like English) do not accept material after the *wh*-word, and yet a clausal structure is assumed. In sluicing sentences the entire TP is elided and, thus, adverbs cannot be spelled out.

- b. Por la mañana, la rama golpeó la ventana, por la tarde, la puerta no
 for the morning the branch hit the window for the evening the door neg
 ‘In the morning, the branch hit the window, in the evening, the door didn’t hit the
 window’ R_{Sbj}
 ‘In the morning, the branch hit the window, in the evening, the branch did not hit the
 door’ R_{Obj}
- (26) a. Por la mañana, la rama golpeó la ventana, no la puerta
 for the morning the branch hit the window neg the door
 ‘In the morning, the branch hit the window, not the door’ R_{Sbj}/R_{Obj}
- b. * Por la mañana, la rama golpeó la ventana, por la tarde, no la puerta
 for the morning the branch hit the window for the evening neg the door

In (25) we can see that topicalization is possible in the first clause. This is expected, since it has a clear clausal status. Topicalization can also take place in the second clause in bare argument ellipsis constructions, (25b), making obvious the clausal nature of the structure. Things look different for sentences with replacive structures, (26). Topicalization is of course possible at the clausal level, (26a). However, the ungrammaticality of (26b) illustrates that a clausal structure cannot be attributed to the replacive.

To summarize, the different status of the remnant in (19a-i) and (19b-i) can be demonstrated by (i) the possibility of having adverbial modifiers in the case of bare argument ellipsis and the impossibility of such modifiers in the case of replacives; and (ii) by the difference in behaviour with respect to topicalization, possible in the remnant of bare argument ellipsis sentences and not possible with replacive structures.

In the next section we will see that the structures in (19a-ii) and (19b-ii) also predict a difference in discourse licensing conditions between bare argument ellipsis and replacives.

3.2.2 Discourse licensing conditions

In this section I will show that replacives and bare argument ellipsis structures differ in terms of their discourse licensing conditions. I will also show that the structures proposed in §3.2 make the right predictions in terms of the difference between informational and contrastive focus.

Given our assumptions, there is “new information” both in the case of informational and contrastive focus. However, only in the case of contrastive focus, (8), is an assumption deliberately removed from the hearer’s ground (i.e. that Mary was the agent of the stealing event), and replaced with another one (i.e. Peter was the agent of the stealing event).

Let us begin the discussion of the discourse licensing conditions of (18a) and (17a) (SVO sentences with DP-neg or neg-DP continuations) repeated below for convenience.

(17) neg-DP (Replacives)

- a. La rama golpeó la ventana, no la puerta [Replacive]
 the branch hit the window neg the door
 ‘The branch hit the window, the door did not hit the window’ R_{Sbj}
 ‘The branch hit the window, the branch did not hit the door’ R_{Obj}

(18) DP-neg (Bare Argument Ellipsis)

- a. La rama golpeó la ventana, la puerta no [Bare Argument Ellipsis]
 the branch hit the window the door neg
 ‘The branch hit the window, the door did not hit the window’ *R_{Sbj}*
 ‘The branch hit the window, the branch did not hit the door’ *R_{Obj}*

To begin with, observe that (17) and (18) are not the answer to the same (implicit) questions. In general, it is not felicitous to use SVO+neg-DP sentences as responses to questions, either broad focus questions like *what happened?* or narrow focus questions *what did the branch hit?* or *what hit the window?* SVO+DP-neg sentences, on the other hand, can be answers to both types of questions. However, when we wish to correct somebody, it is natural to use a neg-DP sentence, i.e. a sentence with a replacive structure, but not a DP-neg sentence, i.e. a sentence with bare argument ellipsis. Below we see examples where a replacive, (17a), is the response to an (implicit) assertion (a case of correction).

- (27) a. A: The door hit the window.
 B: La rama golpeó la ventana, no la puerta [Contrast with subject]
 the branch hit the window neg the door
 b. A: The branch hit the door.
 B: La rama golpeó la ventana, no la puerta [Contrast with object]
 the branch hit the window neg the door

As illustrated in (27), the replacive can establish contrast with the subject or with the object. Both subject and object readings are available.

Given the discussion above, in DP-neg structures new information is simply added to the common ground, whereas in neg-DP structures information is removed from the common ground and replaced by new information. This means that in DP-neg structures there is informational focus, whereas in neg-DP structures there is contrastive focus. To see clearly the differences in the interpretation of DP-neg and neg-DP consider the scenario in (28).

- (28) You and I are having coffee in the living room. It is really windy outside and suddenly we hear a tremendous noise. It is clear to everybody that something has hit something. I go to check what has happened and report back to you:
 a. La rama golpeó la ventana, la puerta no. [DP-neg]
 the branch hit the window the door neg
 b. # La rama golpeó la ventana, no la puerta. [neg-DP]
 the branch hit the window neg the door

By uttering (28a) the speaker is giving you information about what has actually happened: the sound was due to the fact that the branch hit the window. This utterance could be the answer to the question *what happened?* But by uttering (28a) the speaker is also letting the addressee understand that s/he was afraid something worse had happened. There is some ambiguity regarding the speaker’s fears, corresponding to the two readings for the bare argument ellipsis structure. Either the speaker was afraid that the door had hit the window (it is a very heavy door and it would have broken the window), which is the subject reading, or the speaker was afraid that the branch had hit the door (the beautiful door would have gotten damaged), which is the object reading.

Notice that in (28a) all we do is introduce new information to the common ground.¹⁴ (28a) is, thus, felicitous in a context in which it is not presupposed that the addressee has any beliefs about what has hit what. The case of (28b) is different. (28b) is infelicitous in a context in which the addressee has no beliefs regarding what has hit what (like the scenario described above). The addressee could easily have responded to (28b) with (29).

(29) Why are you saying that? I never thought the door may have been hit/ I never thought the door may have hit the window

An utterance of (28b) presupposes that the addressee has some beliefs about what has happened (the addressee either believes that the branch hit the window or the addressee believes that the door hit the window). In the context described above, the addressee has none of these beliefs, and the response in (29) shows that s/he is annoyed that I think you do. Although (28b) is not felicitous in the scenario described above, it would be an appropriate response to either the (implicit) assertion *the branch hit the door* or the (implicit) assertion *the door hit the window*.

The syntactic structures proposed in (19a-ii) and (19b-ii) make correct predictions with respect to this difference in meaning: the structure in (19b-ii) correctly predicts the felicitous utterance of the sentence in the scenario in (28). This is a case of bare argument ellipsis in which old information (*hit the window*) is omitted, and what is spelled out is new information. This type of ellipsis is easily licensed without contrastive information (note that it would have been possible to have *también* ('also') instead of negation in the second clause, thus, there is no contrast with previously mentioned material). All the spelled out constituents in (28a) contain new information: the speaker tells the hearer that the branch hit the window and s/he gives the addressee further information (in the speaker's ground there may have been a possibility that *the door hit the window*). The speaker is not establishing a contrast with the hearer's assumptions. Indeed, the speaker is not presupposing that the hearer has any belief about what has happened. A paraphrase of (28a) in English that attempts to capture these intuitions is provided in (30).

(30) The branch hit the window, the door did not (thank God)!

In structures with replatives, (19a-ii), on the other hand, we do not have two independent proposition-level constituents (see §3.2.1). Replative structures establish a contrast with a constituent in the preceding clause, indicating that an assumption must be removed from the addressee's ground. The replative structure can contrast with either the subject or the object (to be determined by the assumption in the hearer's ground that the speaker tries to remove), (31).

- (31) A: [TP [NP La rama]_{Subj} [VP golpeó [NP la puerta]_{Obj}]]
 the branch hit the door
- A': [TP [NP La puerta]_{Subj} [VP golpeó [NP la ventana]_{Obj}]]
 the door hit the window
- B: [TP[TP[NP La rama]_{Subj} [VP golpeó [NP la ventana]_{Obj}]], [Rep no [NP la puerta]]]
 the branch hit the window neg the door
- 'The branch hit the window, the branch did not hit the door' R_{Obj}
 'The branch hit the window, the door didn't hit the window' R_{Sbj}

¹⁴The two focused elements, *la rama* and *la puerta* are in a symmetric contrast relationship (Rooth 1992), but that is not incompatible with both being informationally focused.

In the object reading (R_{Obj}), the assumption in the hearer's ground was that it was the door that was hit, whereas, in the subject reading, (R_{Sbj}), the assumption was that the door hit the window. The structure for this sentence freely allows both contrasts. It is not only a matter of introducing new information, it is a matter of removing assumptions from the addressee's ground and replacing them with new information.

In sum, bare argument ellipsis constructions are instances of informational focus, whereas replacive structures are always instances of contrastive focus. The different syntactic analyses for the two constructions argued for in this paper reflect this distinction.

3.3 Conclusion

In this section I have defended different syntactic analyses for DP-neg and neg-DP continuations. I have provided evidence in favor of the distinctions by considering the possibility of having adverbial modifiers in the remnant, topicalization, and discourse licensing conditions. I have argued that neg-DP structures are cases of replacives and bear contrastive focus, whereas sentences with DP-neg structures are cases of bare argument ellipsis and bear informational focus.

In §4 I draw the predictions derived from the structures argued for in this section taking into account the processing results in §2. In §5 I report an experiment designed to test these predictions.

4. Focus, structure and Ellipsis resolution

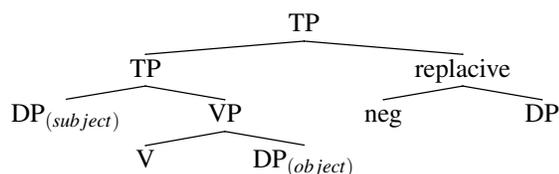
In this section I will spell out the processing predictions regarding the structures presented above in light of constraints regarding ellipsis resolution, processing principles like parallelism between focused elements (FAH, [Frazier and Clifton Jr. 1998](#)) as well as other kinds of parallelism (the *parallelism hypothesis*, [Carlson 2002](#)), and the preference for the least complex syntactic structures (MCP, [Vincenzi 1991](#)).

Let us start by examining replacives, (19a-i) and (22a-i), repeated below for convenience.

(19a) Replacives SVO neg-DP structures

(19a-i) La rama_{subject} golpeó_{verb} la ventana_{object}, no la puerta
the branch hit the window neg the door

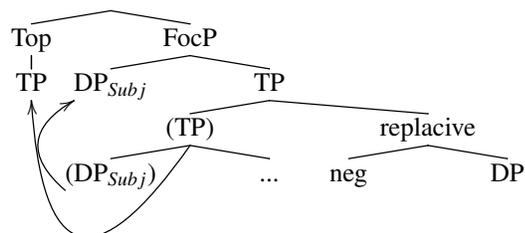
(19a-ii)



(22a) Replacives VOS neg-DP

(22a-i) Golpeó_{verb} la ventana_{object} la rama_{subject}, no la puerta
hit the window the branch neg the door

(22a-ii)



In the case of SVO+neg-DP sentences, (19a-i), there is no structural preference for a subject or an object reading. These are cases of replatives, in which the same structure, (19a-ii), underlies both readings. The MCP does not predict any preference based on structure, and the processor would have to work equally hard for a subject or an object reading. If it turns out that both readings are equally accessible, then, given the FAH, we can conclude that both the subject and the object can be focused.

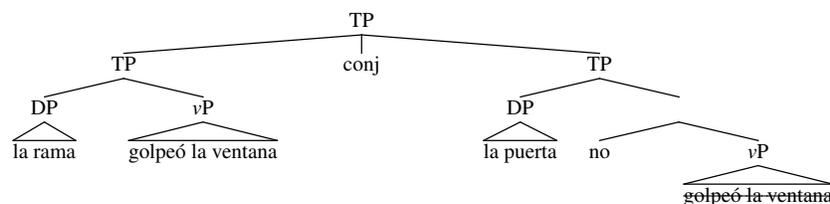
In the case of VOS+neg-DP sentences, the FAH straightforwardly predicts that a subject reading will be favored. In (22a-ii) the subject occupies a focus position (the MCP does not make relevant predictions in this case).

Let us turn now to bare argument ellipsis. We will begin with SVO + DP-Neg sentence, (19b-i). Given the MCP, FAH and the syntactic structure argued for in this paper (19b-ii) (repeated here for convenience) the prediction is that, if focus marking is possible on the subject, there will be a structural preference for a subject reading.

(19b) Bare Argument Ellipsis **SVO DP-neg**

(19b-i) La rama_{subject} golpeó_{verb} la ventana_{object}, la puerta no
the branch hit the window the door neg

(19b-ii)



To get an object interpretation, further movement would be needed, and thus it should be dispreferred.

Let us examine the possibility of an object reading for (19b-i) more closely. One possibility to obtain an object reading with two coordinated clauses would be for the object in the second clause to move to the front of negation, and then the subject and the verb would be elided, (32).

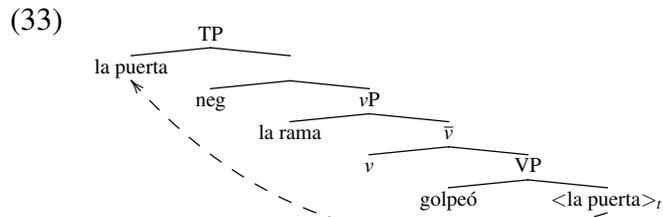
(32) La rama golpeó la ventana, la puerta_{object} la rama_{subject} no golpeó_{verb} <la puerta>_t

In (32) the object has moved to the front of the second clause (topicalization of the object is in principle possible in Spanish to obtain OSV order). In this case we have discontinuous ellipsis, since negation is between the subject and the verb (the option of having negation also move to the front to avoid discontinuous ellipsis is hard to maintain, since such negation movement is not found anywhere else in Spanish and would be specific for this particular coordinated construction¹⁵). In addition to the problems posed by discontinuous ellipsis, this possibility would require the processor to do more work (it is dispreferred by the MCP), and thus is predicted to be disfavored.

¹⁵The general unavailability of neg movement is illustrated by (1b), which is ungrammatical.

- (1) a. La puerta la rama no golpeó
the door the branch neg hit
b. *La puerta no la rama golpeó
the door neg the branch hit

A second possibility to obtain an object reading with two coordinated structures would be to move the object to the front and not move the subject to the specifier of TP, (33). In this case, discontinuous ellipsis would not be needed. In (33) we see the syntactic structure that would correspond to the elliptical clause.



However, with this structure, too, an object reading for *La rama golpeó la ventana, la puerta no* implies a bigger effort on the processor's part than a subject reading, which requires no movement. At this point we have considered two ways to derive object readings, and we have seen that the processor would have to work harder to derive the object reading than the subject reading in both cases. Regardless of whether structures like (32) or (33) are available, the prediction is that a subject reading will be preferred.¹⁶

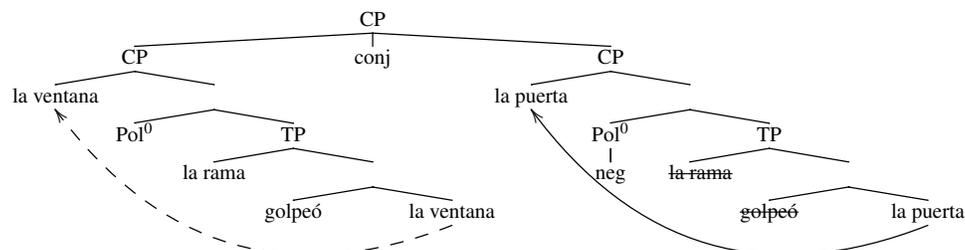
In the case of VOS+DP-Neg sentences, (22b-i), the structure argued for in this paper, (22b-ii), repeated below for convenience, predicts a subject reading.

(22b) Bare argument ellipsis VOS DP-neg

(22b-i) Golpeó_{verb} la ventana_{object} la rama_{subject}, la puerta no
hit the window the branch the door neg

¹⁶For the sake of completeness, let us consider two other ways to get the object reading. The first is in (1a).

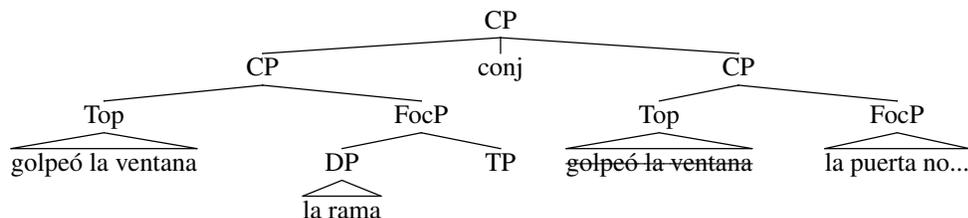
- (1) a. La rama_{subj} golpeó la ventana_{obj}, la puerta_{obj} no
the branch hit the window the door neg



Again, as in (19b-ii), two clauses are conjoined. However, in order to get the object reading, and keep structural parallelism, the object would move covertly in the first clause and overtly in the second clause. Still, more effort is needed from the processor to get the object reading than the subject reading. To get the subject reading no movement would be needed in (19b-ii).

The second possibility does not involve covert movement in the first clause. The picture would be similar to that in (1a) but without covert movement of the object (*la ventana*). Under this account, the object in the first clause stays in situ, it is marked as focused, and generates focus alternatives projected to the TP level. The TP in the second clause, in which we find movement of the object escaping the TP, would then be one of the focus alternatives. This follows Merchant (2001, 2007) proposal in that “syntactic identity is identity of phrase markers modulo focussed elements whose focus alternatives are given by an element in the elided clause” (Merchant 2007:15, footnote 1). Again, with this alternative, more effort is needed to get the object reading than it is needed to get the subject reading (movement is required for the object reading but not for the subject reading).

(22b-ii)



Two parallel structures are coordinated and the simplest analysis leaves the remnant in focus position.

To conclude, in this section, I have presented the processing predictions that can be drawn from the structures I have argued for in the previous section, considering structural factors affecting ambiguous ellipsis resolution as well as processing principles relating focus to ellipsis. The predictions for the various readings of bare argument ellipsis (DP-neg) and replacives (neg-DP) are summarized in (34).

(34) Summary of predictions

	Informational Focus (DP-neg)	Contrastive focus (neg-DP)
SVO	Subject preferred over Object	Subject and Object equally preferred
VOS	Subject preferred over Object	Subject preferred over Object

The experiment in §5 has been designed to check these predictions, which are confirmed. I have presented the predictions in detail because it is important to see how they arise. Confirmation of the predictions regarding readings will provide support for the hypothesis that full overt DP subjects in Spanish are focused.

5. Experiment I

In this section I will present an experiment testing the predictions spelled out in (34). The results from the experiment confirm the predictions. I will begin with a discussion of methodology (§5.1), I will then present the results of the experiment (§5.2), and finally I will present some discussion (§5.3).

5.1 Method

5.1.1 Materials

The materials were sentences with SVO order followed by neg+DP, (35a), and DP+neg, (35b). All the sentences presented were potentially ambiguous between an object and a subject reading.

- (35) a. La rama golpeó la ventana, no la puerta. [SVO + neg-DP]
 the branch hit the window neg the door
 ‘The branch hit the window, the branch didn’t hit the door’ [R_{Obj}]
 ‘The branch hit the window, the door did not hit the window’ [R_{Sbj}]
- b. La rama golpeó la ventana, la puerta no. [SVO + DP-neg]
 the branch hit the window the door neg
 ‘The branch hit the window, the branch didn’t hit the door’ [R_{Obj}]
 ‘The branch hit the window, the door did not hit the window’ [R_{Sbj}]

Sentences following the VOS + neg-DP and VOS + DP-neg pattern, (36a) and (36b) respectively, were also included.

- (36) a. Golpeó la ventana la rama, no la puerta. [VOS + neg-DP]
 hit the window the branch neg the door
 ‘The branch hit the window, the branch didn’t hit the door’ [R_{Obj}]
 ‘The branch hit the window, the door did not hit the window’ [R_{Sbj}]
- b. Golpeó la ventana la rama, la puerta no. [VOS + DP-neg]
 hit the window the branch the door neg
 ‘The branch hit the window, the branch didn’t hit the door’ [R_{Obj}]
 ‘The branch hit the window, the door did not hit the window’ [R_{Sbj}]

Sixteen experimental items were designed in a way that could be highly ambiguous between object reading and subject reading in terms of real world plausibility about the situation described. The stimuli had to be designed without human entities in object position, since in Spanish human direct objects always carry an accusative case marker, *a*, which would straightforwardly disambiguate the interpretation.

Every sentence had four different versions, corresponding to the versions in (35) and (36). Four different questionnaires were created with those sixteen sentences and their corresponding four different versions. A Latin-Square procedure was used to counterbalance the lists, thus, in every questionnaire there was just one version of each sentence. The lists were pseudo-randomized so participants did not see two consecutive items from the same condition and there was always at least one filler between any two experimental items (there were a total of 20 fillers).

5.1.2 *Participants*

The questionnaires were sent by e-mail to four different individuals in Spain. These individuals were instructed to answer one of the four questionnaires and find three more participants (completely unknown to me) who could answer the other three. There was a total of 16 participants. The participants had to meet the conditions of being native speakers of Spanish, in particular of the variety spoken in Castile, so no dialectal difference would influence the results. None of the participants were linguists or students in linguistic classes. The participants ranged from 23 to 32 years of age.

The instructions were given at the beginning of the questionnaire. The participants were told that there were 33 sentences, all of them with two possible readings. Every sentence was presented as in (37), and the participants were asked to check the box corresponding to the first interpretation they got for the sentence above it.

- (37) La rama golpeó la ventana, no la puerta
- | | |
|--|--------------------------|
| La rama golpeó la ventana, la puerta no golpeó la ventana. | <input type="checkbox"/> |
| La rama golpeó la ventana, la rama no golpeó la puerta. | <input type="checkbox"/> |

It was emphasized that it was important that the answer was the first interpretation that occurred to them, and that it was that first intuition that was relevant. In addition, they were told that there were no RIGHT answers, since all the interpretations were possible.

5.2 *Results*

The overall results of the experiment are summarized in (38).

(38) Overall results

Sentences	Subject Reading	Object reading
SVO + neg-DP	32 50%	32 50%
SVO + DP-neg	52 81.25%	12 18.75%
VOS + neg-DP	56 87.5%	8 12.5%
VOS + DP-neg	54 84.375%	10 15.625%

As shown in (38), there was no difference between a subject and an object reading in SVO + neg-DP sentences. There was a preferred subject reading for VOS sentences, both for VOS + neg-DP and VOS + DP-neg.

Two-way ANOVAs within items and within subjects show a main effect of word order and a main effect of the distribution of negation (all $ps < 0.05$). There was a significant interaction of word order and distribution of negation in both analyses ($F_1(1, 15) = 8.3$, $p_1 < 0.05$ and $F_2(1, 15) = 10.8$, $p_2 < 0.05$).

In addition, t -tests comparing subject and object responses were also performed. The difference between subject and object responses in the cases of SVO + DP-neg ($t(15) = 5.3$, $p < 0.001$ item-analysis and $t(15) = 5$, $p < 0.001$ subject-analysis), VOS + neg-DP ($t(15) = 8.2$, $p < 0.00001$ item-analysis and $t(15) = 7.3$, $p < 0.00001$ subject-analysis) and VOS + DP-neg ($t(15) = 6.2$, $p < 0.0001$ item-analysis and $t(15) = 7.6$, $p < 0.00001$ subject-analysis) were significant. In the case of SVO + neg-DP there was no difference between subject and object responses. Also, the data of post-hoc t -tests comparing pairwise difference between sentence types revealed a significant difference between the responses given for the SVO + neg-DP sentences and the other three conditions (all $ps < 0.05$), whereas no significant difference was found between the other three conditions.

5.3 Discussion

5.3.1 Experimental results

The results from Experiment 1 confirm the predictions made in §4. Recall that we were looking at sentences following the pattern in (39) and (40), potentially ambiguous between subject and object reading.

(39) SVO

- a. La rama golpeó la ventana, la puerta no [DP-neg]
 the branch hit the window the door neg
 ‘The branch hit the window, the door did not hit the window’ R_{Sbj}
 ‘The branch hit the window, the branch did not hit the door’ R_{Obj}
- b. La rama golpeó la ventana, no la puerta [neg-DP]
 the branch hit the window neg the door
 ‘The branch hit the window, the door did not hit the window’ R_{Sbj}
 ‘The branch hit the window, the branch did not hit the door’ R_{Obj}

(40) VOS

- a. Golpeó la ventana la rama, la puerta no [DP-neg]
 hit the window the branch the door neg
 ‘The branch hit the window, the door did not hit the window’ R_{Sbj}
 ‘The branch hit the window, the branch did not hit the door’ R_{Obj}
- b. Golpeó la venana la rama, no la puerta [neg-DP]
 hit the window the branch neg the door

‘The branch hit the window, the door did not hit the window’ R_{Sbj}

‘The branch hit the window, the branch did not hit the door’ R_{Obj}

As predicted in §4, the results from Experiment 1 show that in SVO sentences there is a preferred subject reading (81%) for (39a), and that there is equal preference for subject and object readings in (39b) (50%). In the case of SVO + DP-neg, the MCP favors a subject reading, which is possible if the subject can be narrowly focused (FAH and *parallelism*). The preference for subject readings shows that the subject can in fact be narrowly focused. In the case of SVO + neg-DP, there is no structural preference biasing towards a subject or an object reading. The fact that both readings were equally preferred indicates that both the subject and the object can be narrowly focused and the processor can choose either as the correlate of the remnant. With respect to VOS sentences, the results also confirm the predictions: there is a strong preference for subject readings both in the case of neg+DP (87.5%) and in the case of DP+neg (84.375%). In these structures the subject is in a focus position and the results are as expected.

The results in Experiment 1 confirm the predictions made in §4. Those predictions were drawn on the basis of the syntactic structures proposed for the sentences, the MCP and the FAH. However, the results are surprising for two reasons:

On the one hand, the results go against some of the intuitions and observations that have been reported for parallel sentences in English. The strong preference for object readings of elliptical sentences in English supported Carlson *et al.*'s claim that in English the resolution of ellipsis is carried out with an object bias.¹⁷

The second surprising fact arising from the results in Experiment 1 is that, even though they confirm the predictions drawn in §4, they go against predictions made by theories of focus in Spanish that only consider word-order and intonation. We will look into this matter in greater detail. In §5.3.2 I explain the differences in predictions. In §5.3.3 I will argue that in order to make the right predictions we have to consider that, besides word-order and intonation, Spanish also makes use of other language regularities to mark focus. I will base the explanation on the fact that Spanish is a pro-drop language.

In finishing this section, I would like to point to differences in methodology between the work by Frazier and Clifton Jr. (1998) and Carlson *et al.* (2008) and the experiments presented in this paper. Frazier and Clifton Jr. (1998) performed auditory studies while Carlson *et al.* (2008) used a variety of methodologies, including written questionnaires, auditory studies and self paced reading. The data from Spanish collected in this paper was obtained via written questionnaires. While it is

¹⁷As an aside, it is worth noting that an object bias has not been experimentally attested in the case of replacives in English. Carlson (2002) was interested in the effects of parallelism in the resolution of ambiguity. Carlson showed that the manipulation of lexical parallelism affected the disambiguation in sentences with replacive structures, (1).

- (1) a. Maude called a policeman for help, not Marjorie
- b. Maude called a policeman for help, not a fireman

When there is lexical parallelism with the subject, as in (1a), the preferred reading is a subject reading (*Marjorie did not call a policeman for help*), whereas when parallelism is established with the object, (1b), the preferred reading is an object reading. However, to the best of my knowledge, there is no data showing what happens when parallelism does not bias the disambiguation. If replacives follow the tendency observed for ellipsis structures, assuming that there is no difference in the structural complexity between object and subject replacives (see Carlson 2002), one would expect an object preference. What is important is that this preference is not observed in the case of Spanish, in which we see equal preference for the object and subject readings.

true that future research with a variety of methodologies is desirable, the use of this methodology in exploring focus in Spanish is justified by the differences in the strategies used by Spanish to signal focus in relation to the strategies used by English. Intonation is the primary strategy to mark focus in English. Default stress locates focus on the rightmost position and stress shift allows focus to fall on other positions (Reinhart, 1998). In Spanish, default stress also falls on the rightmost constituent, which is taken to be focused by default. However, unlike in English, stress shift is not possible in Spanish. Rather, it is claimed that Spanish does via syntactic operations (namely p-movement, Zubizarreta 1998) what English achieves with intonation. The fact that Spanish relies on the manipulation of syntactic position to indicate focus makes it possible to explore the assignment of focus on the basis of written questionnaires. The difference in methodology noted above thus makes sense given the different focus-strategies deployed by the languages.

5.3.2 Focus, word order and prosody

The results from Experiment 1 show that the overt subject of an SVO sentence can be chosen as the antecedent of the remnant. This indicates that the overt subject of SVO sentences bears narrow focus.

This conclusion is not expected given theories of focus based only on word order and intonation (e.g. Zubizarreta 1999, 1998). According to Zubizarreta (1998, 1999), intonation in Spanish follows the neutral stress rule, and neutral focus (non-contrastive) is placed by default in the last constituent of the sentence. With neutral intonation, the only element that can bear narrow information focus in an SVO sentence is the object, $SV[O]_F$. Focus can project and we may also have broad focus structures, either $S[VO]_F$, focusing the verb phrase, or $[SVO]_F$. Under this account, the subject can never bear narrow informational focus. Zubizarreta (1999) illustrates the claim with the example in (41).

- (41) El gato se comió [un ratón]_F (no un canario)
 the cat se.cl ate a mouse neg a canary
 ‘The cat ate a mouse’ (the cat did not eat a canary)

According to Zubizarreta, with neutral intonation the SVO sentence *El gato se comió un ratón* (‘the cat ate a mouse’) can be the answer to the question *What did the cat eat?*, which matches the focus structure indicated in (41). Focus can project from the object constituent giving rise to broad focus at the level of the VP or the entire sentence. With these focus structures, the sentence can then be the answer to the question *what did the cat do?* or *what happened?* According to Zubizarreta (1998, 1999), the sentence *El gato se comió un ratón*, with neutral intonation, can never be the answer to the question *Who ate a mouse?*

The results of Experiment 1 go against a view of focus that depends only on intonation and structure. The results clearly show that the subject in SVO sentences can receive narrow informational focus. We saw this in the cases of SVO + DP-neg, i.e. the cases with bare argument ellipsis, in which we have informational focus and the remnant DP has a DP as correlate in the preceding clause. In these sentences, there was a preference for a subject reading, unexpected if the subject were not focused. Focus assignment for SVO + DP-neg sentences could have been assigned by the processor in the following manner. Since there was no context for the sentences, the processor begins by attributing wide focus to the whole sentence. However, when the processor gets to DP+neg, it revises the wide focus interpretation. When the processor meets the single DP that is the remnant, it becomes clear that instead it has to assign narrow focus within the antecedent clause

(FAH and *parallelism hypothesis*) to find a correlate for the remnant DP (see [Stolterfoht et al. 2007](#) for evidence supporting *focus structural revision*).

According to a theory that predicts that focus assignment depends only on the interplay between structure and intonation the only possible reading for SVO + DP-neg sentences would be an object reading. Instead, we have found a preference for subject readings, indicating that additional mechanisms modulate the assignment of focus. Given our findings, we would expect that an SVO sentence with an overt full DP in subject position can be the answer to a question like *Who ate the mouse?* This is indeed the case as reported by [Alonso-Ovalle et al. \(2002\)](#). Alonso-Ovalle et al. present the results of an experiment in which 12 question-answer pairs were tested. Two different potential answers were offered for each question, one with VS order, and one with SV order.

- (42) ¿Quién vino?
 who came
- a. Juan vino [SV]
 John came
- b. Vino Juan [VS]
 came John

Contrary to the predictions of a theory like [Zubizarreta \(1998, 1999\)](#), the answer *Juan vino*, (42), in which the subject is the first constituent and thus does not receive default stress, is chosen as answer to the question *who came?* 51.5% of the time.¹⁸ Important additional evidence is provided by [Ocampo \(2003\)](#). On the basis of data taken from real conversations, [Ocampo \(2003\)](#) shows that main intonational prominence does not necessarily fall on the non-presupposed part of the sentence, i.e. the focus part of the sentence. According to Ocampo, speakers of Spanish use stress for many different functions, and the outcome is that at times the part of the sentence presenting new information does not actually bear stress.

The results from Experiment 1 add to the evidence that the subject in non-marked word order (SVO) can be marked as focused, regardless of default intonational prominence on the object (a discussion of related examples involving sluicing will be found in §6.3). These results indicate that structure and prosody are not the only predictors for focus. A proposal regarding the additional mechanisms that mediate focus in Spanish will be presented in the next section.

5.3.3 *The pro-drop hypothesis*

The results of Experiment 1 showed that the subject in SVO sentence can be narrowly marked as focused in both DP-neg and neg-DP structures. We need to explain (a) why the subject is focused in SVO sentences in Spanish; and (b) why Spanish is different from English (there is an object bias in English not found in Spanish). In this section I propose that the explanation relates to one of the most salient differences between English and Spanish: Spanish is a pro-drop language whereas English is not.

As a pro-drop language, Spanish allows covert (unpronounced) subjects. There is a preference for not spelling out given information. In principle this preference is part of both the speaker and the hearer strategies, and overt subjects are thus marked. This is an important difference between

¹⁸Despite reporting the data, [Alonso-Ovalle et al. \(2002\)](#) do not discuss it in detail in the paper, which aims to address a slightly different set of issues. It remains for future research to investigate how the overall results in [Alonso-Ovalle et al. \(2002\)](#) fit with the proposal made in this paper.

Spanish and English, in which an overt subject is always obligatory. It is this difference, I claim, that is responsible for the crosslinguistic differences observed with respect to information structure. Whereas languages like English use intonation and word order as marked strategies to signal focus, Spanish also makes use of the possibility of having both covert and overt subjects with this purpose.

The hypothesis that overt full DPs in subject position are marked as focused explains the experimental results. Let us consider the data again, (43).

- (43) a. La rama golpeó la ventana, no la puerta [neg-DP]
 the branch hit the window neg the door
 ‘The branch hit the window, not the door’
- b. La rama golpeó la ventana, la puerta no [DP-neg]
 the branch hit the window the door neg
 ‘The branch hit the window, not the door’

The experimental results show that there is a preference for subject readings in (43b) and equal preference for subject and object readings in (43a). The preference in (43b) is explained by the MCP. The fact that the subject is available as correlate for the remnant in both cases indicates that the subject bears focus (if the subject did not bear focus we would expect preference for a parse leading to an object reading). The presence of a focus on the subject is explained by the hypothesis that in Spanish a full overt DP in subject position bears focus. The difference between Spanish and English in terms of an object bias (present in English, absent in Spanish) is explained by the fact that in English overt DP subjects are obligatory and so the presence of a full overt DP subject is not a marked option.

To summarize, in a pro-drop language like Spanish, the presence or absence of overt subjects provides an additional mechanism to indicate information status. An overt full DP in subject position indicates the new-information status of the argument, and functions as a focused element. As a focused element, an overt subject will be a natural correlate for the focused material in the continuation. Thus, in SVO neg-DP/DP-neg sentences with overt full DPs in subject position, two elements are focused and can function as correlates of the remnant DP: (i) the subject, since it is an overt full DP in a pro-drop language (*pro-drop hypothesis*), and (ii) the object, since it is the last element of the intonational phrase (e.g. Zubizarreta (1998)). Additional factors, the MCP and parallelism (structural or semantic), can make the processor favor one or the other. In the next section I will present an experiment to test this hypothesis.

6. Experiment 2

The present experiment is designed to test the hypothesis presented in the previous section. It was claimed that overt referential DPs in subject position function as focused elements. Spanish can use the marked choice of overt subjects as a strategy to indicate focus. If overt subjects are understood as focused, they can serve as the correlate of the remnant DP. The *pro-drop hypothesis* arising from the discussion above is summarized in (44).

- (44) Pro-drop hypothesis: Overt subjects are focused in pro-drop languages.

In this section I will first present the experimental methodology (§6.1), I will then present the results (§6.2), and finally I will provide discussion (§6.3 and §6.4).

6.1 Method

6.1.1 Hypothesis

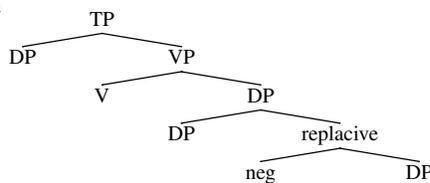
The experimental hypothesis is that in SVO sentences the presence of an overt full DP in subject position allows for a subject reading in both sentences with replacive structures and in cases of bare argument ellipsis. If this is correct, it means that the absence of an overt subject should result in a strong object preference. The availability of subject readings relies on the contrast between overt/covert subjects, not on the syntactic position. If we can have *pro* in subject position, and the preferred reading is an object reading, it would show that overt full DPs in subject position bear focus.¹⁹ This is contrary to predictions made by theories that only pay attention to word order and intonation. Experiment 2 tests whether the absence of an overt referential DP in subject position changes the preferred reading for the experimental sentences. Specifically, it investigates whether more object responses are obtained when there is no overt DP in the subject position (what I will call *pro-drop sentences*).

6.1.2 Materials

Experiment 2 was designed to test the *pro-drop* hypothesis explained above. It was also designed to shed light on a second issue: the possibility that in the object reading of SVO+neg-DP sentences replacive structures are attached low to the object DP, (45b). Up to now, we have always assumed that replacive structures are attached high in the structure (at the TP level), and there is a concern that this assumption may not be correct.

It might be that there are two possible attachment sites for replacives in the structure: a high one, and a lower one that would deliver object readings. One could claim that in addition to (19a-ii), in which we find a replacive structure attached high, a structure like (45b) is also available:

- (45) a. La rama golpeó la ventana, no la puerta
 the branch hit the window neg the door
- b. Alternative structure



XP neg XP constituents are very common. They are found in sentences like *John not Bill bought the beer* (DP neg-DP) or *Mary wrote to Bill not to John* (PP neg PP). A reasonable thought would be to consider that the same constituent structure is found in sentences like (45a), giving rise to a structure like (45b). For the sake of completeness, I tested the availability of (45b). I checked whether the rate of object readings for these sentences remains the same when the surface adjacency between the clause and the replacive is interrupted with an adverb, (46). An adverb in that position would make the attachment site in (45b) unavailable.

¹⁹Let us consider for a moment the predictions made by a pitch accent theory with respect to sentences with a silent pronoun in subject position. In a theory of focus assignment based solely on pitch accent placement we would expect the same results for *pro* VO+neg-DP sentences as the results expected under the *pro-drop hypothesis*. A theory of focus assignment based on pitch accent would say that since silent pronouns cannot receive pitch accents, they can never be focused and thus only possible reading in *pro* VO + neg-DP sentence is an object reading. However, a theory based on pitch accent would not explain why when we have an overt full DP both a subject and an object reading are possible (when no special intonation is provided).

- (46) La rama golpeó la ventana continuamente, no la puerta
 the branch hit the window continuously neg the door
 ‘The branch hit the window continuously, not the door’

If sentences like (46) get significantly less object readings than (45a), in which surface adjacency is not interrupted, we can conclude that the predicted object readings are the result of an analysis like (45b). If the object readings are not eliminated when the surface adjacency of XP neg XP is interrupted, then two possibilities are open: (i) we can still consider that the structure at stake is (45b), and there is a rule for extraposition in Spanish that allows neg-DP to be extraposed (for which there is no other evidence in Spanish); or (ii) the analysis is the one in (19a-ii), in which we have replacive structures attached high (the preferred possibility).

In order to test these issues, a written questionnaire with 18 completely ambiguous sentences was designed. Each sentence had three different versions, (47).

- (47) a. Había una rama en el suelo. Golpeó la ventana, no la puerta [proVO +
 there was a branch on the ground hit the window neg the door
 neg-DP]
 ‘There was a branch on the ground. It hit the window, not the door’
 b. La rama golpeó la ventana, no la puerta [SVO + neg-DP]
 the branch hit the window neg the door
 ‘The branch hit the window not the door’
 c. La rama golpeó la ventana repetidamente, no la puerta [SVO Adv + neg-DP]
 the branch hit the window repeatedly neg the door
 ‘The branch hit the window repeatedly not the door’

The sentence in (47a) does not have an overt full DP in subject position. This sentence tests the pro-drop hypothesis. If sentences like (47a) have a stronger preference for object reading than sentences in which there is an overt referential DP in subject position, as in (47b), the pro-drop hypothesis will be supported. The sentence in (47c) has an overt adverb. If the replacive structure is attached low, at the DP level, the placement of an adverb between the object and the replacive structure should matter. If the number of object responses is lower when the DP is separated from the replacive by an adverb, we can conclude that the object readings are due to a structure in which the replacive is attached to the DP.

Three different lists were designed using a Latin-square procedure. In every list, the 18 experimental sentences and 39 fillers were pseudo-randomized, with the constraint of having at least 2 fillers between experimental sentences.

6.1.3 Participants

The questionnaires were sent via e-mail to four individuals in Spain. Two of them were asked to find three other participants and the other two were asked to find four. So, a total of 18 participants answered the questionnaire. The participants had to be Spanish speakers, in particular, they had to speak the Spanish variety spoken in Castile, and they shouldn’t be linguists. These participants were not known to me.

The participants were told that there was a total of 57 sentences, and that all of them were highly ambiguous. As in Experiment 1, two possible paraphrases were given below every sentence. In the case of the experimental items, one of the paraphrases corresponded to object reading and the other to subject reading (alternating in order from sentence to sentence). The participants of the experiment were asked to check the box corresponding to the most likely reading. Every sentence was presented as in (48).

(48) La rama golpeó la ventana, no la puerta

La rama golpeó la ventana, la puerta no golpeó la ventana.	<input type="checkbox"/>
La rama golpeó la ventana, la rama no golpeó la puerta.	<input type="checkbox"/>

The participants were told that there was no right answer and that the goal of the experiment was to identify their first intuitive understanding of the sentences. Participants were also told that they should not worry if one of the readings was much more obvious or natural than the other.

6.2 Results

The overall results of the experiments are presented in (49).

(49) Overall results in terms of number and probability

Sentences	Subject Reading	Object reading
SVO + neg-DP	45 42%	63 58%
SVO + Adv + neg-DP	57 53%	51 47%
pro VO + neg-DP	5 5%	99 95%

Two way ANOVAs within items and within subjects show a main effect of presence/absence of an overt full DP in subject position (all $ps < 0.05$). However, there is no main effect of presence/absence of adverb preceding negation. T-test analyses were performed to compare subject and object responses. The difference between subject and object responses was significant in the case of *proVO* +neg-DP (same results in subject- and item-analyses: $t(17) = -20.1$, $p < 0.0001$). However, the difference was not significant in the case of SVO+neg-DP and SVO Adv+neg-DP. Also, t-tests making pairwise comparisons between the number of subject responses in different conditions show a significant difference between the number of subject responses in *proVO*+neg-DP and SVO+neg-DP (same results in subject- and item-analyses: $t(17) = 6$, $p < 0.0001$) and *proVO* +neg-DP and SVO Adv+neg-DP ($t(17) = 8.4$, $p < 0.00001$ item-analysis and $t(17) = 7.6$, $p < 0.00001$ subject-analysis). However, there was no significant difference in the number of subject responses between SVO + neg-DP and SVO Adv + neg-DP.

6.3 Discussion

The results confirmed the *pro-drop hypothesis*. In the absence of an overt full DP subject, the object reading is strongly preferred (95%) because in this case the covert subject does not bear focus. However, the presence of an overt full DP in subject position both object and subject readings are equally preferred, confirming that an overt DP in subject position bears focus and thus can be taken as correlate of the remnant (FAH). In sum, with an overt DP in subject position both subject and object readings are possible: (i) a subject reading is possible because an overt full DP is understood as focused, and thus can be the correlate of the DP in neg-DP; and (ii) an object reading is also possible since the object is intonationally marked as focused by being the last element in the intonational phrase, and thus can also be the correlate of the DP in neg-DP. Once again the conclusions drawn from the data presented in this paper agree with reports in the

literature divorcing subject focus from stress (see the mention above of [Alonso-Ovalle et al. 2002](#) and [Ocampo 2003](#) for Spanish).

Let us now turn finally to the alternative syntactic structure proposed for the object readings of replacives in (45b). The results of Experiment 2 showed that the presence of an adverb in SVO+neg-DP sentences does not significantly change the number of object responses (there is no significant difference between the number of subject responses between SVO +Adv + neg-DP and SVO + neg-DP sentences, $p=0.24$). This indicates that object readings arise because of structures like (19a-ii) (high attachment of replacives). However, we can appreciate a raw numerical change in the results: there are more subject responses when there is an adverb between the object and the replacive structure (neg-DP). This means that we cannot completely rule out the possibility of at least some of the object responses in SVO+neg-DP sentences being due to a low attachment of the replacive to the DP (see (45b)).

6.4 Discussion of cross-linguistic implications

We have observed that there is an apparent difference between Spanish and other languages (English and German) regarding ambiguous ellipsis resolution. The English sentence in (50a) has a preferred object reading (51a), whereas the two possible parallels in Spanish (50b) do not (SVO+neg-DP sentences equally favor object and subject readings, (51b), and SVO+DP-neg sentences clearly favor subject readings).

- (50) a. The branch hit the window not the door
 b. La rama golpeó la ventana, no la puerta / la puerta no
 the branch hit the window neg the door / the door neg
- (51) a. Object reading: The branch hit the window, the branch did not hit the door.
 b. Subject reading: The branch hit the window, the door did not hit the window.

In Spanish we do not find the object bias observed by [Frazier and Clifton Jr. \(1998\)](#) for ellipsis resolution in English. [Frazier and Clifton Jr. \(1998\)](#) attribute the object bias to a language regularity in English according to which new information is preferably placed at the end of the sentence. The difference between the results for the two languages can be explained if we take into account the differences between the grammars of the languages, i.e. in a pro-drop language like Spanish, overt full DPs in subject position are marked as focused and thus can be chosen as correlate of the remnant. Once the different strategies for marking focus are taken into account, we observe that the same principles of ellipsis resolution apply across languages.

7. Conclusion

Focus plays a very important role in linguistic phenomena and an understanding of the different strategies used by languages to signal focus is crucial to understand the grammar of focus and differences across languages. The present paper makes a contribution to our knowledge of how languages convey focus and how the different strategies interact in the processing of ellipsis. One of the conclusions that can be drawn from the work presented in this paper is that it is necessary to pay attention to a multitude of dimensions to understand how focus marking works. Not only has it been necessary to take into account syntax, semantics and pragmatics, it has also been necessary to take into account processing strategies and language regularities. The picture that emerges is that there may be multiple strategies for marking focus in a language.

The results obtained in this paper provide support for the *pro-drop hypothesis*: in pro-drop languages, an overt full DP in subject position bears focus. Future experimental and theoretical investigations should take this into consideration in order to draw the right predictions. The results of the experiments reported in this paper also bring additional support to the *focused antecedent hypothesis* (FAH): the processor chooses the antecedents of the remnant on the basis of its being focused.

The results obtained in the experiments reported in this paper suggest changes in the way we look at informational focus, and open new windows for research into focus in pro-drop languages. The availability of multiple strategies for encoding focus in Spanish (word order, marked prosody and overt subjects) has proven to be important not only in explaining cross-linguistic differences between English and Spanish, but also in explaining experimental results which would be unexpected from the point of view of an account that only related focus to word-order and prosodic prominence. The experiments reported in this paper dealt only with data from Spanish. Research into other pro-drop languages could strengthen the claim that the facts we observed in Spanish are really due to its pro-drop nature.

The proposal in this paper follows the line of Carlson *et al.* (2008) in claiming that the processor is able to track different types of regularities in identifying new/old information. Research into other languages that also have multiple strategies for packaging information structure could serve to strengthen the proposal that language specific regularities concerning focus must be taken into account together in order to explain the processing of reduced clauses.

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