This paper analyses one aspect of the so-called two-pronoun puzzle (or Dahl’s puzzle). I argue that the two-pronoun puzzle hides a double puzzle: I call them Puzzle A and Puzzle B. Puzzle A is why one logically possible interpretation disappears in certain cases of ellipsis of pronominal dependencies; and the other way around, Puzzle B is why this reading is still possible when ellipsis doesn’t apply. Puzzle A can be accounted for in terms of conditions on parallelism and semantic binding (cf. Fox 2000, Reinhart 2000, Büring 2005). Puzzle B has not yet been resolved in the same terms. In this paper I propose an explanation that is compatible with the analysis in Fox (2000). First, based on Basque data I show that the two-pronoun puzzle phenomenon is not restricted to VP ellipsis: it also concerns silent arguments. Then, I show how this Basque data help understanding better what is under Puzzle B: the facts appear to be less uniform once information structure is taken into account, and focus is shown to play a central role in the derivation that allows the crucial data.

1. The interpretive asymmetries of the two-pronoun puzzle

The two-pronoun puzzle, or Dahl’s puzzle, is the name given to the interpretive asymmetries displayed in cases of ellipsis of pronominal dependencies (cf. Dahl 1974, Fiengo & May 1994, Fox 2000 a.o.).

In the conversation in (1)-(2) for instance, the sentence in (1), with all the pronouns with value ‘Max’ (indices are used just as shorthand to indicate the intended reading), can serve as an antecedent for the optional VP ellipsis in (2b) (the elided constituent is represented between brackets). In principle, the ‘answers’ to (1) in (2a) and (2b) are equivalent; they differ in that VP ellipsis is applied in the latter but not in the former. Depending on the reading each pronoun can get (strict ‘Max’ or sloppy ‘Oscar’), the four interpretations in (3) are logically possible for the sentences in (2). However, since the first description of the data in Dahl (1974), it is considered that whereas (2a) allows these four interpretations, (2b) only allows (3a-b-c), excluding the interpretation in (3d), the ‘strict + sloppy’ (henceforth ST-SL) reading. This asymmetry is the essence of the so-called two-pronoun puzzle.

(1)  Max, said he, saw his, mother.
What I would like to focus on in this paper is that the two-pronoun puzzle is in fact a double puzzle. On the one hand, if the logic gives four possible interpretations for a sentence, the question is why in some cases one of them is impossible. But on the other hand, if the impossibility of the ST-SL reading is accounted for in a principled manner, the problem gets reversed: if we continue to assume that (2a) and (2b) are equivalent and that they differ minimally in their phonological (non)realization, it is not clear why the sentence where ellipsis does not apply, i.e. (2a), allows the otherwise unavailable interpretation. These two puzzles are spelled-out in (4).

(4) Puzzle A: Why is the ST-SL reading impossible in VP ellipsis (cf. 2b)?
Puzzle B: Why is the ST-SL reading still possible in non-ellipsis (cf. 2a)?

Below we will see that despite its apparent redundancy, this dichotomy appears to be relevant. In this paper, I will take Fox’s (2000) account of Puzzle A as a point of departure (section 2), and I will show that it does not give a straightforward way of answering to the second question in (4), Puzzle B (section 3). Then I will develop an explanation in terms of Fox’s system, proposing that it is the absence of application of the condition on Parallelism that allows the ST-SL reading. First, based on Basque data I will show that the two-pronoun puzzle phenomenon is not restricted to VP ellipsis: it also concerns Basque silent arguments (section 4). Then, I will show that this Basque data can help us understanding better what is under Puzzle B: there are in fact two different structure under the allegedly uniform (2a), and the structure permitting the ST-SL reading is different from the one permitting the other readings (sections 5 and 6). Section 7 is the conclusion.

2. Puzzle A

Puzzle A can be explained as the effect of the interaction of two constraints (cf. Reinhart 2000, Fox 2000, Büring 2005). On the one hand the parallelism condition on ellipsis in (5) ensures that an elided constituent receives an interpretation parallel to that of an antecedent (cf. Chomsky & Lasnik 1993, Fiengo & May 1994, Fox 2000). An intuitive characterization of Parallelism will be sufficient for our purposes here (cf. Dalrymple et al. 1991, Fiengo & May 1994, Hardt 1999, Merchant 2001 a.o. for a discussion). What is important is that semantic binding relations are part of this characterization: for a constituent to be elided, the binding relations in it will have to be the same as those in its antecedent (cf. Fox 2000), under the assumption that ellipsis sites have full-fledged internal structure (cf. Hankamer & Sag 1976, Fiengo & May 1994, Lasnik 1995, Merchant 2001, a.o.).

(5) Parallelism condition on ellipsis
A constituent can be elided only if it has a parallel antecedent.

On the other hand a constraint on the semantic binding of pronouns gives the possible representations of sentences (cf. Reinhart 1983, 2000, Heim 1993, Fox 2000). In this paper I
will assume that the constraint on binding is an economy rule defining the possible antecedents for a pronoun; (6) is Fox’s (2000) Rule H (cf. also Büring 2005):

(6) **Rule H**

A pronoun \( \alpha \) can be bound by an antecedent \( \beta \) only if there is no closer antecedent \( \gamma \) such that it is possible to bind \( \alpha \) by \( \gamma \) and get the same semantic interpretation.

Let us see how the interaction between Parallelism and Rule H can account for Puzzle A in Fox (2000). First, Rule H will give the actual representation of the pronominal dependencies in (1). Two representations are logically possible: (7) and (8). However, contrarily to (7), the binding of the second pronoun in (8) is made across another possible antecedent he, and it does not give a different semantic interpretation; both representations give the interpretation where ‘Max said Max saw Max’s mother’. Thus by Rule H, the actual representation of the binding relations in (1) can only be the one in (7), the representation in (8) being uneconomical.

(7) Max said he saw his mother.

(8) Max said he saw his mother.

Then, by Parallelism, the semantic binding relation of the possessive pronoun in the elided VP in (2b) will be the same as that in its parallel VP antecedent in (1), that in (7); hence the possessive pronoun will be able to be bound by the embedded subject pronoun, but, crucially, not by the main subject. This only possible binding relation is represented in (9):

(9) Oscar said he saw his mother

Now, if we look at the representation necessary for the ST-SL interpretation of (2b), illustrated in (10), the possessive pronoun has to be bound by the subject in the main clause.

(10) Oscar said he saw his mother  

\[ Oscar \ said \ Max \ saw \ Oscar's \ mother \]

The representation of the binding of *his* in (10) is parallel to that of (8), but we have seen that by Rule H the representation in (8) is ungrammatical. In consequence, the demands of Rule H and Parallelism cannot converge in order to allow the ST-SL interpretation of the elided VP in (2b).

3. **Puzzle B**

Fox’s (2000) system presented above gives an explanation for what we called Puzzle A. In the remaining part of this paper, I will be concerned with the second part of the two-pronoun puzzle, the Puzzle B.

Let us first spell out Puzzle B in the light of the analysis of Puzzle A given above. Under the assumption that ellipsis is an optional operation and that the ellipsis site has a full syntactic structure, (2b) has to have a counterpart in which the VP is overt and that has the same interpretation (that is, a deaccented counterpart; cf. Tancredi 1992, Rooth 1992,
Chomsky & Lasnik 1993). At first sight (2a) seems to be that counterpart, because the VP is intuitively ‘parallel’ to that of (1); but this is impossible, because the interpretation of (2a) and (2b) differ in that the former but not the latter allows for the ST-SL reading. However, all the things being equal, following the system in Fox (2000), Parallelism and Rule H would be predicted to apply equally, be the VP phonologically realized or not. Hence there is no apparent reason for (2a) to allow for the ST-SL reading. This ‘paradox’ is the essence of Puzzle B.

We have to conclude that it is only apparently that the sentence in (2a) is the overt equivalent of the sentence in (2b) (at least in the case in which we get the ST-SL interpretation). What is the difference between them? We saw in section 2 that it is the combination of the particular effects of Rule H and Parallelism that blocks the ST-SL interpretation in (2b); thus it means that the same combination is not met in the case where (2a) has ST-SL reading, that is, the effect of either Rule H or Parallelism is different. First, obviously, it cannot be that the effect of Rule H is different; it cannot be that Rule H gives a different representation for (1) when (2a) has ST-SL interpretation. Rule H applies automatically whenever there is a pronoun and its possible antecedents in a derivation; as seen above, its result is unequivocal in (1), and the only possible representation is the one in (7). Hence, the difference between (2a) and (2b) has to lie in the effect of Parallelism. The hypothesis is the following: Parallelism does not apply between (1) and (2a); in consequence the interpretation of the pronominal dependency in the latter is not dependent on that in the former. More precisely, by Rule H (1) will have the representation in (7) and (2a) will have the representation in (10); the difference between both binding relations is not blocked by Parallelism. In the following section I show that Basque gives evidence in favor of an analysis of Puzzle B in terms of a non-application of Parallelism.

4. The two-pronoun puzzle in Basque

Basque shows the same interpretive effects as English (1)-(2), but in an environment different from VP ellipsis. This language, which allows its subjects, direct objects and indirect objects to be phonologically empty (cf. Goenaga 1980, Ortiz de Urbina 1989), displays the interpretive effects of the two-pronoun puzzle when the pronouns in embedded contexts are phonologically silent (phonologically empty arguments are indicated by [e]). More specifically, in the conversation in (11)-(12), when the second, possessive pronoun is realized (cf. (12a)), the ST-SL reading in (13d) is available; but when it is phonologically empty (cf. (12b)), it is not available. The (13a-b-c) readings are available for both (12a) and (12b); and the (non-)realization of the first pronoun has no effect on the possible readings. As in the two-pronoun puzzle in English, phonological emptiness in Basque (in this case, phonological emptiness of the second, possessive pronoun) corresponds to the case where the ST-SL reading ‘disappears’: the second pronoun must be overt in order to display the ST-SL reading.

(11) Peiok, esan digu [berak, bere, ama ikusi duela]
    Peio say Aux s/he his mother see Aux.that
    ‘Peio told us that he saw his mother.’

    Jon  say Aux s/he his mother see Aux.that
    ‘Jon told us that (he) saw his mother.’

    b. Jonek esan digu [berak/[e] [e] ikusi duela]. [* ST-SL]
    Jon  say Aux s/he see Aux.that
    ‘Jon told us that (he) saw [e].’
(13)  

a.  Jon told us that Peio saw Peio’s mother.  [strict + strict]  
b.  Jon told us that Jon saw Jon’s mother.  [sloppy + sloppy]  
c.  Jon told us that Jon saw Peio’s mother.  [sloppy + strict]  
d.  Jon told us that Peio saw Jon’s mother.  [ST-SL]  

If we take the two-pronoun puzzle as a property of ellipsis (cf. Fiengo & May 1994), the natural conclusion is that the phonologically empty subjects in (12) are indeed elided constituents (cf. Duguine 2006). In consequence, their behavior will be representative of the phenomenon of ellipsis.

5. Accounting for the Basque data

In this section, I show that the Basque data in (11)-(13) can be accounted for by the interaction between the properties of ellipsis and information structure.

Crucially, Basque speakers agree in that the second pronoun in (12a) has to be ‘emphasized’ in order to get the ST-SL reading. That is, it has to be focused. Basque focused constituents are subject to syntactic movement to the left periphery followed by verb-movement, resulting in an obligatory focus-to-verb adjacency, the focused phrase ending in the immediate preverbal position (cf. Ortiz de Urbina 1989). This formal characteristic of Basque makes a prediction. Whenever a pronoun is in postverbal position, it is not focused; hence if the second pronoun in (12a) appears in a postverbal position, the ST-SL interpretation should not be available. This prediction is actually borne out: the sentence in (14) below, as an answer to (11), cannot be interpreted as Jon said Peio saw Jon’s mother (the readings in (13a-b-c) are however available)

(14)  Jonek esan digu [berak[e ikusi duela] bere ama].

Jon  say Aux  s/he see Aux.that  his mother
‘Jon told us that he saw his mother.’

In consequence, what the minimal pair (12a)-(14) shows is that the second pronoun has to be fronted, that is, focalized, in order for the sentence to display the ST-SL reading.

Until this point I have shown that (i) the empty arguments in (12) are elided constituents, (ii) in sentences displaying the ST-SL reading the second pronoun is necessarily overt, and (iii) in sentences displaying the ST-SL reading the second pronoun is necessarily focalized. From (ii) and (iii), it results that focalized pronouns are necessarily overt. Then, if, as stated in (i), the arguments of the verb are subject to ellipsis in Basque, it is natural to conclude that focused pronouns cannot be subject to ellipsis: focalization blocks ellipsis (cf. Merchant 2001, Han & Romero 2004 a.o. for similar ideas). The generalization is thus the following:

(15) Generalization on focalization:  
A focused constituent cannot be subject to ellipsis.

Summarizing, pronouns are subject to ellipsis in Basque, but when they are focused, they cannot be elided. This explains why if there is a certain information structure configuration that allows a given interpretation (in this case a ST-SL reading), the elements participating in this configuration cannot be phonologically empty; it is only when the second pronoun is overt and focused that the ST-SL reading will be displayed.
6. An explanation for Puzzle B

The Basque data just presented show that the ST-SL reading is to be related to the focalization of the second pronoun. Let us return now to the Puzzle B of English described above. With regards to the sentence in (2a), speakers of English esteem that the ST-SL reading is more clearly available when the second pronoun is phonologically emphasized than when it is not. It is interesting to see that the intuition on the second pronoun being emphasized is present in the literature, but is not taken as being relevant. In Reinhart (2000) the equivalent of (2a) is described as “funny (as long as the destressing and intonation pattern required by too is kept)”. Also, in Fiengo & May (1994: 130) it is explained in a footnote that “a speaker may place emphasis on one or the other of the pronouns in the string in order to bring out which of the [interpretations] the string corresponds to”. However this is not considered as relevant: “doing so … does not transform [(2a)] into a different string in terms of anaphoric possibilities”.

The intuitions of the English speakers and the notes in Reinhart (2000) and Fiengo & May (1994) point towards a unification of the phenomena in Basque and English. Obviously, the emphatization alluded to is focalization; hence in English as in Basque, the ST-SL reading is permitted only when the second pronoun is focused. If (2b) is derived from VP ellipsis, this means that the second pronoun is elided as part of the main VP. However, if this pronoun is focused, and under the assumption that the generalization in (14) holds in English too (cf. Han & Romero 2004), the impossibility of eliding the pronoun will also block the ellipsis of the bigger VP constituent. In consequence, it is only the version of the sentence in (2) where the second pronoun is focused that will be able to display the ST-SL interpretation, that is, the one where the VP is overt, (2a).

Summarizing, (2b) does not allow the ST-SL reading because it does not permit the possessive pronoun to be interpreted as focused. Hence, in fact (2a) as such does not allow for the ST-SL interpretation: there is a (2c) sentence that differs minimally from (2a) by having a F(ocus) feature on the pronoun:

(1) Max said he, saw his, mother.

(2) a. Oscar said he saw his mother, too.
    b. Oscar did <say he saw his mother>, too.
    c. Oscar said he likes his\[F\] mother, too.

Going back to the question of Puzzle B, we can see that the fact that the second pronoun is focused explains why Rule H can give the representation in (10) for (2c). The antecedent sentence in (1) has a non-focused second pronoun whereas the one in (2c) has a focused second pronoun. If this is so, the VPs are not parallel; focusing one constituent in the second VP violates Parallelism. But now, if Parallelism does not hold, the representation in (2c) is not dependent on that of the preceding sentence, and in consequence the representation of the binding relation does not have to be parallel to that of (1). In (2c), the first pronoun gets its assignment from the context (‘Max’); by Rule H then, the closest possible antecedent for the second pronoun (with the referential value ‘Oscar’) is the subject of the main clause, as shown by the representation in (16) (capital letters indicate focusing).

(16) Oscar said he, saw HIS\[F\] mother, too.

In consequence, once the focusing effects identified, the system proposed in Fox (2000) can also account for the Puzzle B part of the two-pronoun puzzle. The ‘puzzle’
derived in fact from a minimization of the role that focus can play with regards to Parallelism.

But now that we know that in a sense it is the focus on the possessive pronoun that allows the ST-SL reading, one question arises: is this the only effect of focus here? Focus is supposed to be subject to felicity conditions that have nothing to do with anaphoric dependencies and (most of the time) Parallelism. The question in fact has to be asked in the following manner: is the use of focus in (2c) felicitous? A priori it should be the case, because under the assumption that focus has uniformly a pragmatic and semantic effect (on the truth-conditions of sentences, in the sense of Jackendoff (1972)), violation of the conditions regulating these effects should lead to non-felicity. A brief look at the basis of the phenomenon of focus, ‘contrastivity’, used here in the broad sense, will show that focus is legitimate with regards to the constraint regulating its use. For the sake of simplicity, I will assume a definition of focus based on contrastivity: focus on a constituent makes the sentence contrast with a discursive antecedent, be it a question or a statement (cf. Rooth 1992, Roberts 1996/1998, Schwarzschild 1997, Kadmon 2001 for versions of this idea). (17) is Schwarzschild’s (1994) Constraint on Contrast in Discourse as given in Kadmon (2001), and largely inspired by the Contrasting Phrase Constraint in Rooth (1992). It is based on the alternative semantics theory (Rooth 1992).

(17) Constraint on Contrast in Discourse
An utterance B is felicitously contrasted with another utterance A only if

\[ [[A]]^p \neq [[B]]^p \text{ and } [[A]]^p \text{ is a member or a subset of } [[B]]^f \]

(18) \([Y]^o\) is the ordinary semantic value of Y.
(19) \([Y]^f\) is the focus semantic value of Y,
where \([Y]^f\) is the set of the propositions obtainable by replacing the focus with an alternative of the same type.

Let us take the plausible conversation in (20), where the ST-SL reading can be derived ‘naturally’.

(20) A: Max said he, saw his, mother.
B: (No, this cannot be true:) Oscar said he, saw HIS, mother. [ST-SL]

Here, we have (replacing pronouns by proper names for ease of presentation):

(21) a. \([(20A)]^p = \{\text{Max said Max saw Max’s mother}\}

b. \([(20B)]^p = \{\text{Oscar said Max saw Oscar’s mother}\}

c. \([(20B)]^f = \{\text{Oscar said Max saw Max’s mother’, ‘Oscar said Max saw Oscar’s mother’}\}

\([(20A)]^p \text{ and } \([(20B)]^p \text{ differ, and } [[(20A)]^p \text{ is a member of } [[(20B)]^f, \text{ thus (20A)} \text{ and (20B) are felicitously contrasted. In consequence, not only does focus on the second pronoun in (2B)/(2c) ‘ensure non-parallelism’, but its use is also felicitous in its discursive context.}

8. Conclusion

In this paper, in the light of some recent proposals in the semantic binding literature, especially the one in Fox (2000), I showed that half of the two-pronoun puzzle remained
unaccounted for. I proposed an explanation for the fact that the sentence where the VP is overt does not behave like the sentence where it is elided, despite they are apparently equal and they are both subject to Rule H and Parallelism. Data from Basque showed that what was considered a uniform phenomenon (phonological realization vs. non-realization) is not so uniform, given that information structure comes to play a crucial role, changing the effects of Parallelism and Rule H. In consequence, the present work gives further evidence in favor of the proposal in Fox (2000): once the differences between the actual possible derivations are identified, the system based on Parallelism and Rule H accounts for Puzzle B, and hence is able to give a complete explanation for the two-pronoun puzzle.

References