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Ellipsis in Split Questions

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Abstract Split questions such as *What tree did John plant, an oak?* contain a *wh*-question part and a tag. Drawing on Spanish, Basque and English data, this article argues that these two parts of a split question are independent clauses. The tag is in fact an elliptical non-*wh*-question, where ellipsis is licensed in the same way as in other sentence fragments. I provide detailed argumentation that the tag involves movement of a correlate of the *wh*-phrase, followed by ellipsis of the remnant, thus contributing to the growing body of evidence that sentence fragments (sluicing, fragment answers, etc.) are syntactically full clauses. The syntax proposed provides a simple account of the intonation patterns found in split questions and of their semantics. Furthermore, it is argued that the only existing alternative analysis of split questions cannot account for many of the properties of this construction.

Keywords Split Questions · Ellipsis · Fragments · Islands · Pied-piping

1 Introduction

In a *split question* (SQ), a *wh-part* is followed by a *tag*, as illustrated in the following Spanish example:[1]

I would like to thank José Camacho, Ángel Gallego, Peter Lasersohn, Jason Merchant, Marcel den Dikken, and three anonymous *NLLT* reviewers for very helpful criticism and discussion. I would also like to thank Ikuska Ansola-Badiola for her Basque and Spanish judgments and for her sharp nonlinguist intuitions about both languages. Early versions of this work were presented at the 36th Linguistic Symposium on Romance Languages in Rutgers University in 2006 and at the Bilbao-Deusto Student Conference in Linguistics in 2006. Audiences at both events were very helpful with their comments. I alone am to blame for any errors found in this article.

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[1] In the Spanish examples, I do not use the standard opening question mark '¿', in order to avoid confusion with markers of grammaticality judgments.

(1) Qué árbol plantó Juan, un roble?
what tree planted Juan an oak
'What tree did Juan plant, an oak?'

The *wh*-part and the tag are separated by an intonation break, represented in the orthography with a comma. Intuitively, the *wh*-part in an SQ is a *wh*-question, and the tag provides a possible answer to that question. Example (1) could thus be understood as the question whether the answer to the question *What tree did Juan plant?* is *An oak*.[2]

Except for Camacho (2002), who provides an analysis of the syntax of SQs, this type of question is only sporadically mentioned in the literature (Bäuerle 1979; Schwarzschild 1999: 162–163).[3]

In this article, I explain these and other properties of SQs by adopting an analysis in which the two parts of the question are separate sentences. I refer to this as the *biclausal analysis* of SQs. Under this approach, the *wh*-part is a *wh*-question, and the tag is the remnant of ellipsis in a non-*wh*-question. This analysis is exemplified in (2) for the question in (1):[4]

(2) [$_{CP}$ what tree$_i$ planted Juan t_i] [$_{CP}$ an oak$_j$ ~~planted Juan t_j~~]

In particular, I claim that the tag is derived by ellipsis from a non-*wh*-question in which some constituent undergoes focus-fronting and the rest of the clause is deleted.

Although a lot of the data discussed in this article are from Spanish, SQs are also possible in several other languages. In fact, additional crucial evidence for the analysis is provided from Basque and English in section 7. Thus, I claim that the biclausal analysis is valid for all languages with SQs. Many of the Spanish judgments reported here can be replicated in other languages, but no systematic attempt has been made to check every claim made here cross-linguistically.

This analysis is compared with the monoclausal account proposed in Camacho (2002), where the tag is a constituent embedded in the *wh*-part. Specifically, it is generated forming a constituent with the *wh*-phrase. The structure of (1) in this account is the following:

[2] The type of SQ discussed here should not be confused with another type common in Spanish and Catalan and discussed in Lorenzo (1994); López-Cortina (2003); Contreras and Roca (2007). What is special about this other type of SQ is that the *wh*-phrase in the *wh*-part is an invariant *what* (*qué* in Spanish and *què* in Catalan), regardless of the grammatical function or animacy of its correlate in the tag. The following is an illustrative example from Spanish (cf. (6a), where the *wh*-phrase is *cuándo* 'when', as might be expected:

(i) Qué va Juan a Chicago, mañana?
what goes Juan to Chicago tomorrow
'When is Juan going to Chicago, tomorrow?'

Although they seem to have the same semantics and pragmatics as the SQs discussed here, and their syntax looks similar enough, it is not clear to me at this point if the analysis proposed here can be extended to this type of SQ.

[3] Klecha (2008), based on an earlier version of this article, discusses some extentions to the analysis proposed here in order to deal some issues arising with SQs in English.

[4] For ease of exposition, I use only English glosses when illustrating analyses of data in other languages. The strikethrough in some of the examples represents ellipsis.

(3) [$_{CP}$ what tree$_i$ planted Juan [t_i an oak]]

As will be argued throughout this article, only the biclausal analysis provides a natural account of the main phonological, semantic and syntactic properties of SQs.

The basic problem posed by SQs is a familiar one in the literature on elliptical structures. In these questions, it is not clear what the tag contributes to the semantics of the whole question. If, as hypothesized in the monoclausal approach, the tag is embedded within the *wh*-part, we seem to need special mechanisms to account for the fact that the *wh*-phrase and the tag have the same thematic role and grammatical function in the sentence. For instance, both *qué árbol* 'what tree' and *un roble* 'an oak' in (1) are, in some sense, the theme and the object of the verb *plantó* 'planted'. This goes against a basic intuition behind virtually all modern linguistic theories, namely that there is a one-to-one mapping between arguments and thematic/grammatical roles. Although the verb in (1) seems to have two themes/objects, we do not want to say that this is a general property of this verb. The same problem arises in a somewhat different way in the biclausal approach. If the tag is part of a separate clause, how can we account for the intuition that it is the theme/object of the verb in the *wh*-part? The specific implementation of the biclausal approach proposed here hypothesizes that it is, in fact, *not* the theme/object of the verb in the *wh*-part; the tag is the theme/object of a different instance of the verb which is elided and whose antecedent is the verb in the *wh*-part. This solution to the problem follows a long-standing generative tradition that accounts for the sentential properties of apparently nonsentential structures by positing additional covert structure (Ross 1969; Morgan 1973; Sag 1976 and much subsequent work).[5] The main conceptual advantage of this type of approach is that, while it complicates the grammar minimally by adding ellipsis rules, it allows us to maintain the same type of syntax-semantics mapping needed to account for nonelliptical structures.[6]

The data examined here also provide evidence that the remnant of ellipsis undergoes movement (e.g. *un roble* 'an oak' in (1–2)), as expected in a constrained theory of ellipsis where only constituents can be deleted (among others, Jayaseelan 2000; Lasnik 1999; Merchant 2004). The arguments are based on several tests having to do with preposition stranding, islands, pied-piping, multiple *wh*-questions, and English complement clauses.

This article is organized as follows. The biclausal approach is introduced in section 2, and initial evidence from intonation is given in section 3. Section 4 discusses the biclausal analysis of SQs further, concentrating on both the syntactic and semantic aspects of the licensing of ellipsis in this construction. Several central properties of SQs are argued to be explained by an ellipsis analysis. The rest of the article is dedicated to justifying the different details of the syntactic analysis proposed here.

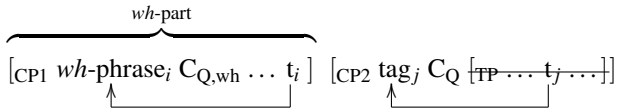
[5] For relevant references on ellipsis in Spanish, see Brucart (1987); Zagona (1988); López (1999); López and Winkler (2000); Depiante (2000); Saab (2005); Vicente (2006, 2008); Rodrigues *et al*. (2009).

[6] Following Merchant (2001), I implement ellipsis in terms of an E feature in a head that triggers ellipsis of its complement (see subsection 4.2). A reviewer points out that anchoring the trigger of ellipsis on a feature does not complicate the grammar with ellipsis rules, since E is a lexical feature whose phonological properties cause nonpronunciation of part of the structure. However it is implemented, causing nonpronunciation of part of the structure is in all relevant respects equivalent to triggering an ellipsis rule, so it is not clear in what sense making E a lexical feature simplifies the ellipsis approach to sentential fragments.

Section 5 provides arguments that the *wh*-part is a *wh*-question, and sections 6–7 discuss evidence for both the ellipsis and movement components of the biclausal analysis. In arguing for both aspects of the analysis, these sections provide several arguments against the monoclausal approach. Section 8 discusses the fact that the tag must be final in an SQ, arguing that it provides further evidence for the analysis proposed here, and section 9 concentrates on SQs with multiple *wh*-phrases, which can be used to strengthen some of the arguments presented in previous sections. Section 10 concludes the article.

2 Split questions

The main claims made by the biclausal analysis proposed here are the following. First, the *wh*-part is a *wh*-question, with fronting of a *wh*-phrase to the specifier of a *wh*-interrogative C. Second, the tag is the remnant of ellipsis in a non-*wh*-question. Within that question, a constituent undergoes movement to the specifier of C, whose TP complement undergoes deletion at PF:



For ease of exposition, within the second clause of a split question, I distinguish between the *source of the tag*, which is always a non-*wh*-question (CP2 in (4)), and the *tag* proper, which is the material that survives ellipsis in the non-*wh*-question. Note, furthermore, that the tag is typically understood as having the same grammatical function and thematic role as the *wh*-phrase. For instance, both the *wh*-phrase and the tag in (1) are understood as the object and theme argument of the verb *plantó* 'planted'. I refer to this fact in this article by calling the tag a *correlate* of the *wh*-phrase.[7]

The *wh*-part is a question with overt *wh*-movement to the specifier of C. As expected, SQs can be formed on the basis of any type of *wh*-question. (1) is an example with an object *wh*-phrase, and (5–6) illustrate SQs with subject and adjunct *wh*-phrases, respectively:

(5) Quién plantó el roble, Juan?
who planted the oak Juan
'Who planted the oak, Juan?'

(6) a. Cuándo va Juan a Chicago, mañana?
when goes Juan to Chicago tomorrow
'When is Juan going to Chicago, tomorrow?'

b. Por qué está Pedro enfadado, porque has hablado con Juan?
why is Pedro angry because you.have talked with Juan
'Why is Pedro angry, because you've talked with Juan?'

[7] In most examples discussed here the tag is a correlate of the *wh*-phrase. However, as discussed in subsection 4.3 and section 8, the tag can sometimes contain material other than the correlate.

On the other hand, the second clause in an SQ is a non-*wh*-question where everything but the tag (XP in (4)) is elided. Ellipsis is licensed in this question by an antecedent that is to be found in the *wh*-part. For instance, the tag *Juan* in (5) is the result of ellipsis in the question *Juan plantó el roble?* 'Did Juan plant the oak?', licensed by equivalent antecedent material in the *wh*-part.

Another ingredient of the analysis is that the tag undergoes movement within the second clause. Specifically, it typically undergoes focus-fronting.[8] As in other Romance languages, focus-fronting in Romance moves a focused phrase to the left periphery of the clause (Contreras 1976; Hernanz and Brucart 1987; Rizzi 1997; Zubizarreta 1998). For instance, the tag in (1) is the result of ellipsis in the yes/no-question with focus-fronting in (7):[9]

(7) Un ROBLE plantó Juan?
an OAK planted Juan
'Did Juan plant an OAK?'

For ease of exposition I assume a simplified left-periphery where both *wh*- and focused phrases move to the specifier of C. Alternatively, one could follow Rizzi (1997) in assuming that they move to the specifier of Foc, a head in a more articulated theory of the left-periphery. The analysis proposed here does not hinge on this detail.

In summary, the basic idea of the biclausal approach is that an SQ is simply a sequence of two questions asked by the same speaker. Apart from whatever discourse constraints there are on such sequences, no other formal link is established between the two clauses. The main advantage of the analysis is that the existence of SQs simply follows from the fact that questions can follow one another in discourse, and from the independently motivated process of ellipsis.

The analysis of the tag outlined above parallels similar claims made about fragment answers in Merchant (2004); Brunetti (2003):[10]

(8) a. Qué árbol plantó Juan?
what tree planted Juan
'What tree did Juan plant?'

b. Un roble.
an oak
'An oak.'

Merchant gives convincing evidence that fragment answers involve the two main mechanisms proposed for the tag above: (i) the fragment undergoes movement within a full sentence, and (ii) everything in that sentence but the fragment undergoes ellipsis. Furthermore, Brunetti (2003) claims that the movement involved in fragment

[8] Other movement sources of tags such as Clitic Left Dislocation (CLLD) are also predicted to be possible in the present analysis. See section 9.

[9] Spanish focus-fronted constituents must contain a word with focal stress. This word, and its English gloss, is represented in capitals. Focal stress is also represented in the English translation using capitals.

[10] Brunetti's analysis is based on a 2003 manuscript version of Merchant (2004). See also Morgan (1973); Hankamer (1979); van Riemsdijk (1978); Culicover and Jackendoff (2005), among others, for other relevant literature on fragments.

answers in Italian is focus-fronting. As we will see, this parallelism between the two analyses is justified by striking similarities in the two constructions, and many of the arguments for this part of the analysis of SQs (see section 7) are taken from the literature on fragment answers.

The basic rationale for these two claims is the following. Positing elliptical material in fragments and SQs allows us to simplify the syntax-semantics mapping by avoiding special rules of interpretation for fragments and SQs. Furthermore, positing movement in fragments and SQs allows for a constrained theory of ellipsis where this operation can affect only constituents (see the introduction to section 7 for further discussion of this point). For instance, if these constructions did not involve movement of the object in (1, 8b), ellipsis would operate on the subject-verb string *Juan plantó* 'Juan planted', which is not a constituent. Under the movement approach, what is elided is a constituent (which also contains the trace of the moved item, as in (2)). To the extent that we are successful in substantiating these claims empirically, we will be justified in adopting this constrained view of syntax and the mapping to semantic interpretation.

3 Intonation

Initial evidence for the biclausal analysis comes from prosody. As discussed in Camacho (2002), both parts of an SQ have the predicted intonation contour if they are separate questions.[11] First, the *wh*-part has the intonation contour of a *wh*-question, with an initial pitch rise associated with the *wh*-word, followed by a gradual descent and ending with a sentence-final fall.[12] Second, the tag has the intonation contour of a non-*wh*-question, as expected. In all examples discussed so far, it is interpreted as a (matrix) yes/no question, whose main intonational correlate is upstep beginning on the word with nuclear or focal accent (see Beckman *et al*. 2002 for details and overview of the literature).[13]

Furthermore, the tag need not be interpreted as a yes/no-question. Examples in which the source of the tag is an alternative question are also possible:

(9) a. Quién plantó el roble, Juan o Pedro?
who planted the oak Juan or Pedro
'Who planted the oak, Juan or Pedro?'

b. Qué árbol plantó Juan, un olmo o un haya?
what tree planted Juan an elm or a beech
'What tree did Juan plant, an elm or a beech?'

[11] For relevant literature on Spanish intonation patterns, see Beckman *et al*. (2002) and references cited there.

[12] This is the default intonation contour of *wh*-questions. There are other possibilities, all of which share the initial rise. See Navarro Tomás (1968); Quilis (1993); Sosa (2003) for discussion.

[13] Depending on factors that are not very well understood, yes/no-questions can also have a final rise. As expected, the tag in an SQ can also have this final rise.

The main difference between these and earlier examples is that the tag contains a disjunction. As expected, the tag in this type of SQ shows the characteristic intonation contour of an alternative question, with a final fall. Furthermore, the sentences in (9) need not be interpreted as alternative questions. If they are pronounced with the intonation pattern characteristic of a yes/no-question, they are interpreted as such. In other words, these sentences have the same ambiguity as the corresponding non-*wh*-questions. For instance, (9b) has the same ambiguity as its non-*wh*-question counterpart:

(10) Juan plantó un olmo o un haya?
Juan planted an elm or a beech
'Did Juan plant an elm or a beech?'

The intonation patterns found in SQs are a straightforward prediction of the biclausal approach. As acknowledged in Camacho (2002), these facts contradict the main hypothesis in the monoclausal approach, namely, that the tag is embedded in the *wh*-part. Although that work does not provide an analysis of the intonation patterns in SQs, it seems that the monoclausal approach would need to posit *ad hoc* mechanisms to account for them. In the following sections, I provide further arguments for the biclausal approach by looking at both their syntax and semantics.

4 The licensing of ellipsis in split questions

Since Rizzi (1986), it has become standard in the literature to analyze the licensing of phonologically empty elements in terms of a licensing requirement and an identification requirement (see also Lobeck 1995). In this section, I propose an analysis of ellipsis in SQs along these lines, following Merchant's (2001) implementation in terms of an E feature that plays a crucial role in both requirements. Subsection 4.1 lays out the basic ingredients of the analysis and discusses the licensing requirement, and subsection 4.2 shows how the identification requirement is met in the present analysis. Finally, subsection 4.3 discusses some of the predictions of this account.

4.1 The licensing head

As sketched in section 2, the source of the tag in an SQ is an interrogative CP where (i) some constituent has been focus-fronted to the specifier of C, and (ii) TP, which contains the trace of the moved constituent, is deleted at PF. Focus-fronting is triggered by a C head that bears a Foc feature that needs to be checked by a phrase bearing the same feature in the specifier of C. Following Merchant (2001), ellipsis is triggered by an E feature in certain heads that triggers ellipsis of the complement of the head at PF. In the case of SQs, this entails the presence of E in C, which triggers ellipsis of its complement TP. Thus, the C head of the second clause of an SQ bears

a Q feature (since CP is interrogative), a Foc feature that triggers focus-fronting, and an E feature that triggers ellipsis:[14]

(11) $[_{CP}\ XP_{F,j}\ C_{F,Q,E}\ [\sout{_{TP}\ \ldots\ t_j\ \ldots}]]$

At PF, E provides an instruction not to pronounce the complement of the head bearing the feature (i.e. TP). This can be implemented in terms of deletion of (phonological features of) constituents, or perhaps lack of insertion of phonological material if we assume a late insertion model. As argued in Merchant (2001), anchoring the licensing of ellipsis in the lexicon in this way provides a principled explanation for the crosslinguistic distribution of ellipsis structures. For instance, the fact that VP ellipsis is possible in English but not in several other languages is explained by assuming that T can have an E feature in English but not in those other languages (see the end of this subsection and the introduction to section 7 for further discussion).

One of the main claims of the present analysis is that the second clause of an SQ is the result of TP-ellipsis in a question with focus-fronting (see section 9 for other movement sources for tags). For instance, the tag in (12) has the same structure as (13).

(12) Qué árbol plantó Juan, el roble?
what tree planted Juan the oak
'Which tree did Juan plant, the oak?'

(13) El ROBLE plantó Juan?
the OAK planted Juan
'Did Juan plant the OAK?'

Although nonelliptical sentences (including interrogatives) with focus-fronting are possible in Spanish, they require special contexts, and it is not clear whether this requirement is met in SQs. In fact, the nonelliptical version of (12) is not completely felicitous, and this seems to be the general case for SQs:

(14) ??Qué árbol plantó Juan? El ROBLE plantó Juan?
what tree planted Juan the OAK planted Juan
'Which tree did Juan plant? Did he plant the OAK?'

In fact, the counterpart of (14) where the focused object is in final position in the second clause is much better:[15]

[14] I would like to thank two anonymous reviewers for several comments that helped in developing the details of the analysis of SQs discussed in this subsection.

[15] This sentence involves another syntactically defined focusing strategy in Spanish and Italian, which places focused phrases in sentence final position. As argued in Zubizarreta (1998) this strategy does not involve rightward movement of the focused phrase; rather, constituents to its right (if any) are displaced to its left so that it can receive Nuclear Stress by the regular stress rules in these languages. Note that this rules out the possibility of analyzing the tag in SQs as involving *rightward* movement to a hypothetical focus position, followed by ellipsis of the remnant. Further evidence against a rightward movement analysis is provided in subsection 8.1. I would like to thank an anonymous reviewer for bringing this alternative to my attention.

(15) Qué árbol plantó Juan? Plantó Juan el ROBLE?
what tree planted Juan planted Juan the OAK
'Which tree did Juan plant? Did he plant the OAK?'

As shown by this example, the decreased acceptability of (14) is not simply due to a preference not to repeat an entire structure. (15) is identical in this respect, but it is fully acceptable.

This fact could be argued to constitute evidence that the tag does not undergo movement in the second clause. However, sections 7 and 9.1 below provide thorough theoretical and empirical argumentation that the tag does undergo movement. In the reminder of this section, I provide an analysis of this mismatch between focus-fronted questions and tags in SQs which resolves this apparent contradiction and removes the potential objection to the movement analysis of the tag in SQs.

Brunetti (2003) notes a similar problem with fragment answers in Italian. Her main observations are also true for Spanish, and I replicate them here based on the latter language. She observes that, while a fragment answer to a *wh*-question is completely felicitous, a corresponding answer with focus-fronting is somewhat degraded (though not completely infelicitous):

(16) Qué árbol plantó Juan?
what tree planted Juan
'Which tree did Juan plant?'

a. El roble.
el oak
'The oak.'

b. ??El ROBLE plantó Juan.
the OAK planted Juan
'Juan planted the OAK.'

(16b) should be compared to (17), which is a felicitous answer to the question (although, as expected, not as felicitous as a fragment answer). In this case, focused *el roble* 'the oak' is in its default sentence final position (see footnote 15).

(17) Juan plantó el ROBLE.
Juan planted the OAK
'Juan planted the OAK.'

Brunetti nevertheless proposes that fragment answers are derived from sentences where the fragment is focus-fronted, in order to account for the syntactic evidence for movement in her own work and in Merchant (2004). More specifically, (16a) is derived from (16b) by ellipsis of TP, under an analysis of fragment answers similar to the one presented above for the tag in SQs. The fragment cannot be derived from (17) under the assumption that ellipsis can only target constituents (see the introduction to section 7 for further discussion of this point):

(18) *$[_{TP}$ ~~Juan $[_{VP}$ planted~~ the OAK $]]$

The reason why the nonelliptical source of (16a) in (16b) is somewhat degraded is that (nonelliptical) focus-fronting sentences require a contrastive context. For instance, (16b) is felicitous in a context where a previous sentence provides a contrast to the focus-fronted constituent:

(19) a. El haya la plantó JUAN.
the beech it planted JUAN
'JUAN planted the beech.'
b. No. El ROBLE plantó Juan.
no the OAK planted Juan
'No. Juan planted the OAK.'

Brunetti accounts for this distribution of focus-fronting sentences by adopting the following condition:[16]

(20) Ellipsis of background material in a sentence applies if the elided material has an antecedent which is also background material.

Following Brunetti's use of this condition, I assume it establishes a preference: other things being equal, ellipsis of material that meets the condition is better than full pronunciation. Furthermore, as discussed below, the condition is only relevant for material that meets the syntactic licensing conditions on ellipsis.[17]

(20) presupposes that a sentence with a focused constituent is split into focus and background material. In (16b), *plantó Juan* 'planted Juan' is background. Under the assumption that *wh*-phrases are focused, the same material in the question in (16) is also the background in this sentence. Since *plantó Juan* in the question is part of the background, (20) favors ellipsis, making the elliptical version of the answer in (16a) preferable to (16b). On the other hand, the full answer in (17) is allowed because ellipsis of the background material would violate the ban on ellipsis of nonconstituents (more specifically, the string *Juan plantó* is not exhaustively dominated by a node that is the sister of a head specified for the feature E). Finally, (19a) provides a suitable context for focus-fronting in (19b) and involves focus on the subject *Juan*, which is therefore not part of the background. Since the background in (19b) does contain *Juan*, it does not have an antecedent that is also background, so that (16) is irrelevant and ellipsis need not apply.[18]

This analysis provides a straightforward explanation for the contrast between the SQ in (12) and its nonelliptical counterpart (14). In this case, the background *plantó Juan* 'planted Juan' in the second clause has an antecedent in the *wh*-question that is also background, which forces ellipsis. Therefore, the preference for ellipsis in

[16] Note that this is a condition on the antecedent of the elided material. A similar but distinct discourse condition on the elided material itself is discussed in the next subsection.

[17] As noted by an anonymous reviewer, (20) must be interpreted as a global condition. More specifically, in the theory of the licensing of ellipsis adopted above, a sentence with ellipsis must involve a numeration (in the sense of Chomsky 1995) that is different from the corresponding sentence without ellipsis, since the former has an E feature that is absent in the latter. Thus, (20) compares sentences with different numerations.

[18] See Brunetti (2003) for further illustration of this analysis.

SQs has the same explanation as the similar preference for ellipsis in answers to *wh*-questions. Furthermore, as in the case of answers, the nonelliptical counterpart of the SQ where the focused phrase is not fronted (15) cannot feed ellipsis, since that would involve ungrammatical deletion of a string that is not a constituent.

Although this paper concentrates on Spanish, SQs are common in many languages. The following are relevant examples from English and Basque,[19] respectively:

(21) Which shrub did you plant, the rhododendron?

(22) Se arbola ipiñi ban Jonek, aritze?
what tree.ABS planted had Jon.ERG oak.ABS.SG
'What tree did Jon plant, the oak?'

The biclausal analysis explored here can easily be extended to other languages, and important evidence for the analysis presented in section 7 is drawn from English and Basque. Note, however, that not all languages allow focus-fronting in questions. For instance, fronting of focused constituents is not possible in English questions:

(23) *A BOOK did John read?

This is in sharp contrast to Spanish, where this type of question is grammatical, albeit requiring special contexts, as discussed above. Thus, there must be some component in the analysis that accounts for this crosslinguistic difference.

To deal with cases like these we must appeal to some mechanism whereby movement necessarily feeds ellipsis. Similar issues have been raised in the literature on pseudogapping, where many authors have found evidence that this construction involves a similar derivational relation between movement and ellipsis: among others, Lasnik (1999); Johnson (2001); Takahashi (2004); Merchant (2008). Following the latter's analysis of pseudogapping, I assume that in English (and other languages with these properties) the feature F that is responsible for fronting of focused constituents in questions necessarily cooccurs with the feature E licensing ellipsis. In other words, a C head with the feature specification [Q, F, E] is available in both Spanish and English, but one with [Q, F] is only available in Spanish. This stipulation is sufficient to account for the crosslinguistic variation in the data, and locates parametric variation in the lexicon, in line with much current research in syntax.

With respect to Basque, an operation similar to Spanish focus-fronting was first proposed in Ortiz de Urbina (1986), in order to account for certain syntactic restrictions on the placement of focused constituents in this language. This analysis has been further developed in several works, including Ortiz de Urbina (1995); Elordieta (2001); Irurtzun (2006). This type of movement is available both in statements and questions:

(24) a. ARITZE ipiñi ban Jonek
OAK.ABS.SG planted had Jon.ERG
'Jon planted the OAK'

[19] All Basque examples in this article are from the Bizkaian variety of Ondarru. I use the following abbreviations in the Basque examples: ABS: absolutive; COMP: complementizer; ERG: ergative; NF: nonfinite inflection; SG: singular.

b. ARITZE ipiñi ban Jonek?
OAK.ABS.SG planted had Jon.ERG
'Did Jon plant the OAK?'

Under a movement analysis of the syntax of focus in Basque, the SQ tag in (22) is then the result of ellipsis in the question in (24b).[20]

Finally, recall that the tag in an SQ can also have an alternative question as the source, as in the following example:

(25) Qué árbol plantó Juan, un olmo o un haya?
what tree planted Juan an elm or a beech
'What tree did Juan plant, an elm or a beech?'

It is clear that under the present analysis the tag in this example must in some way be related to the following nonelliptical alternative question:

(26) Juan plantó un olmo o un haya?
Juan planted an elm or a beech
'Did Juan plant an elm or a beech?'

Under the hypothesis that the tag undergoes leftward movement in the second clause, a plausible analysis of (25) would involve movement of *un olmo o un haya* 'an elm or a beech' and ellipsis of the rest of the sentence:

(27) $[_{CP}$ [an elm or a beech]$_i$ C ~~[$_{TP}$ Juan planted t_i]~~]

However, Han and Romero (2004) provide detailed argumentation for an analysis of alternative questions according to which the string *un olmo o un haya* in (26) is not a constituent. They propose a clausal coordination analysis of alternative questions where the second disjunct is in fact a clausal constituent (VP/vP or TP) where everything but the overt material is elided (see also Larson 1985; Schwarz 1999):

(28) [Juan planted an elm] or [~~Juan planted~~ a beech]

This analysis is not compatible with our assumptions about ellipsis, since the remnant does not undergo movement in the source clause.

I would like to propose tentatively that the remnant does undergo movement, in a way parallel to SQs, fragment answers and similar constructions:[21]

(29) [Juan planted an elm] or [[a beech]$_i$ ~~Juan planted t_i~~]

[20] In Arregi (2002), I propose an alternative approach to the syntax of focus in Basque, based on principles of the syntax-phonology interface and movements that are not directly related to focus. Under this approach, there is no focus-fronting in Basque. If this analysis turns out to be correct, a biclausal approach to Basque SQs would need to adopt the restrictions on C proposed for English above.

[21] In fact, Han and Romero (2004) provide evidence that there is movement to the left periphery in the second disjunct in alternative questions. However, they interpret this as movement of a *wh*-phrase that is realized as *whether* in English embedded questions and as null in matrix questions. It is not clear to me at this point whether this evidence could be reinterpreted as an argument for movement of the remnant.

In particular, the nonelliptical counterpart of the alternative question in (26) with focus-fronting in the second disjunct is grammatical in Spanish (with an obvious preference for a null subject):

(30) Juan plantó un olmo, o un HAYA plantó (Juan)?
Juan planted an elm or a BEECH planted (Juan)
'Did Juan plant an elm, or did Juan/he plant a BEECH?'

If this analysis of alternative questions is on the right track, then the tag in SQs would involve further movement and ellipsis in the first disjunct. The analysis of the tag in (25) would be the following:[22]

(31) [[an elm]$_i$ ~~Juan planted t_i~~] or [[a beech]$_j$ ~~Juan planted t_j~~]

Whether the details of the analysis of alternative SQs are right or not depends on the correctness of the analysis of alternative questions suggested above, a question that goes beyond the scope of the present paper. However, it should be clear that the present analysis predicts that the tag in an alternative SQs is an alternative question that undergoes (further) ellipsis.

4.2 Identification

In an SQ, the tag is the focused remnant of ellipsis in a non-*wh*-question. For instance, the source of the tag in (32a) is (32b):

(32) a. Quién plantó el roble, Juan?
who planted the oak Juan
'Who planted the oak, Juan?'
b. JUAN plantó el roble?
JUAN planted the oak
'Did JUAN plant the oak?'

The tag in (32a) is the result of deleting everything but the focus-fronted constituent *Juan* in (32b). Intuitively, the identification requirement on ellipsis in this example is met because in the *wh*-part, the constituent *plantó el roble* 'planted the oak' provides a suitable antecedent. In this subsection, I elaborate this part of the analysis further, drawing on Merchant's (2004) analysis of fragments.

[22] A reviewer points out an interesting prediction of this analysis of alternative SQs that, unfortunately, I cannot discuss in detail here. The analysis seems to predict that examples like the following are grammatical, a prediction that is borne out in Spanish:

(i) Qué árbol plantó Juan, un roble o al final no decidió ir?
what tree planted Juan an oak or at.the end not decided go
'What tree did Juan plant, an oak, or did he decide to not go in the end?'

In this case, the disjunction involves ellipsis only in the first disjunct. There is no ellipsis in the second disjunct, since it contains material that does not satisfy the identification condition discussed in the next subsection.

Merchant (2001) proposes that the identification requirement on ellipsis is the consequence of the following constraint (among others, Rooth 1992a; Romero 1997b; Fox 2000):

(33) *Focus Condition on Ellipsis*
A constituent α can be deleted iff α is e-GIVEN.

He implements this condition by making the denotation of the ellipsis feature E in C be the partial identity function $[\lambda p : p$ is e-GIVEN$\,.\, p]$, which introduces the presupposition that its argument be e-GIVEN.

The Focus Condition on Ellipsis is based on the notion of e-GIVENness, which in turn is based on Schwarzschild's (1999) GIVENness:[23]

(34) An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo $\exists$-type shifting, A entails F-clo(E), and E entails F-clo(A).

$\exists$-type shifting is an operation that raises expressions to type t by existentially binding unfilled arguments, and F-closure (F-clo) is defined as follows (Schwarzschild 1999):

(35) The F-closure of α, written F-clo(α), is the result of replacing F-marked parts of α with $\exists$-bound variables of the appropriate type (modulo $\exists$-type shifting).

F-marking in this definition refers to an F-feature assigned to constituents in the syntax, and the reader is referred to Schwarzschild (1999) for the details of its semantics.[24]

Following Merchant (2001, 2004), I assume that the Focus Condition is sufficient to account for the relation between the elided constituent and its antecedent. It is essentially a semantic identity condition, applying at LF, and it is not clear to which extent an additional syntactic identity requirement is necessary.[25]

Ellipsis in SQs is licensed as follows. The structure of the second clause in the SQ in (32a) is the following, where the focused subject *Juan* undergoes focus-fronting:[26]

[23] As shown in Merchant (2001), the basic predictions of the theory are the same under the Alternative Semantics theory of focus (Rooth 1985, 1992b, 1996).

[24] Note that, because of the definition of e-GIVEN in (34), the Focus Condition (33) requires calculating the F-closure of elided material. This does not entail that elided material must contain F-marked constituents; rather, it requires that all such F-marked constituents, if any are present, be replaced by existentially bound variables. In fact, elided material cannot contain F-marked constituents, so the F-closure requirement is trivially met in the case of ellipsis. Note also that the absence of F-marked constituents in elided material is explained by the well-motivated condition that F-marked material be prosodically more prominent than non-F-marked material (among many others, Jackendoff 1972; Cinque 1993; Selkirk 1995; Schwarzschild 1999). Elided constituents have no prosody and can thus not be more prominent than other constituents.

[25] See Chung (2006); Merchant (2007) for evidence for a syntactic identity condition.

[26] For ease of exposition, I assume that the finite verb remains within TP in focus-fronting. This might turn out to be wrong, since focus-fronted constituents tend to be left-adjacent to the finite verb (though there are counterexamples, such as (149) on page 46 below), a fact that might be captured by T-to-C movement (Contreras 1976; Torrego 1984; Hernanz and Brucart 1987; Rizzi 1997). If that were the case, there should be some way of preventing this movement in ellipsis cases like (36), where, by hypothesis, TP is deleted. Similar problems arise in sluicing (Merchant 2001: 62–75, van Craenenbroeck and Lipták 2008), and in pseudogapping in English, which Lasnik (1999) analyzes as involving a VP ellipsis structure

(36) $[_{\text{CP}}$ Juan$_{\text{F}}$ $[\sout{_{\text{TP}}\ t_{\text{Juan}}\ \text{planted the oak}}\ ]\ ]$

Furthermore, the structure of the *wh*-part is the following:[27]

(37) $[_{\text{CP}}$ who $[$ planted $[_{\text{TP}}\ t_{\text{who}}\ t_{\text{planted}}$ the oak $]]]$

The basic idea is that ellipsis of *plantó el roble* 'planted the oak' in the second clause is possible because a constituent in the *wh*-part, namely *plantó el roble*, is a suitable antecedent. For ease of exposition, I refer to the elided constituent as 'E', and to the antecedent as 'A'. Both constituents denote the function $[\lambda x.x$ planted the oak$]$. The result of applying $\exists$-type shifting to these constituents is therefore the same (α' is the result of applying $\exists$-type shifting to the denotation of α):[28]

(38) $\text{A}' = \text{E}' = \exists x[x$ planted the oak$]$

Since neither constituent contains F-marked parts, their F-closure is the same:

(39) $\text{F-clo}(\text{A}) = \text{F-clo}(\text{E}) = \text{A}' = \text{E}' = \exists x[x$ planted the oak$]$

E is e-GIVEN with A as antecedent, since A$'$ entails F-clo(E), and E$'$ entails F-clo(A). Thus, ellipsis of E is licensed by the Focus Condition on ellipsis (33).

Consider next an SQ where the *wh*-phrase (and the tag) is an object:

(40) Qué árbol plantó Juan, un roble?
what tree planted Juan an oak
'What tree did Juan plant, an oak?'

In this example, the source of the tag is the following yes/no question:

(41) Un ROBLE plantó Juan?
an OAK planted Juan
'Did Juan plant an OAK?'

Ellipsis in this case affects everything in this question except the F-marked constituent *un roble* 'an oak':[29]

(42) $[_{\text{CP}}$ an oak$_{\text{F}}$ $[\sout{_{\text{TP}}\ \text{Juan planted}\ t_{\text{oak}}}\ ]\ ]$

where the main verb does not raise to the V heading the projection where the external argument is generated (a movement that is obligatory outside pseudogapping). The basic idea in these works is that ellipsis voids the need for head movement.

[27] I assume that the finite verb in *wh*-questions moves to C (for different views, see Torrego 1984; Suñer 1994).

[28] A reviewer points out that there is a potential issue here due to the fact that the verb is in C in the *wh*-part (37). This seems to imply that the verb is not part of the representation of A. If that were the case, A$'$ would then be $\exists x, R[x\ R$'ed the oak$]$ instead of (38). The same issue arises in other ellipsis constructions involving C, such as sluicing and fragment answers. Following Heycock (1995), I assume that moved predicates always undergo obligatory reconstruction at LF. Since the Focus Condition applies at LF, the verb is in its base position in VP in the representation of the *wh*-part that is relevant for the Focus Condition, with the desired result that A$'$ is as in (38).

[29] Note that the finite verb precedes the subject in (41) (see footnote 26). Since this detail is not important for the analysis, I have abstracted away from inversion in the account of ellipsis in (42).

The structure of the *wh*-part is the following:

(43) $[_{\text{CP}}$ what tree planted $[_{\text{TP}}$ Juan t_{planted} t_{tree} $]]$

The TP constituent is deleted in the second clause, with *plantó Juan* 'planted Juan' in the *wh*-part serving as antecedent. The two contituents have the same interpretation, namely, $[\lambda x$.Juan planted $x]$. In a way similar to the previous example, we can easily see that:

(44) $\text{F-clo(A)} = \text{F-clo(E)} = \text{A}' = \text{E}' = \exists x[\text{Juan planted } x]$

Thus, ellipsis of the TP in the second clause of the SQ is licensed because it is e-GIVEN, since both clauses of (34) are met.

4.3 Some predictions of the analysis

The analysis of SQs proposed above explains a number of the basic properties of this construction having to do with the form of the tag and possible replies to SQs.

One of the most salient properties of an SQ is that it is interpreted as a non-*wh*-question. In particular, the form of the source of the tag determines the possible felicitous answers to an SQ. First, if the source of the tag is a yes/no question, the answer must be *yes* or *no*. In the following examples, the source of the tag in the SQ in (45b) is the yes/no question in (45a), and the alternatives in (45c) provide felicitous and infelicitous answers to both (45a) and (45b) (I use the symbol '%' to denote infelicity as a reply to a question).[30]

(45) a. JUAN plantó el roble?
JUAN planted the oak
'Did JUAN plant the oak?'

b. Quién plantó el roble, Juan?
who planted the oak Juan
'Who planted the oak, Juan?'

c. Sí. / No. / %Juan. / %Pedro.
yes / no / Juan / Pedro

Second, when the source of the tag is an alternative question, the answer must be one of the alternatives given in the tag itself:[31]

(46) a. Juan plantó un olmo o un haya?
Juan planted an elm or a beech
'Did Juan plant an elm or a beech?'

[30] As expected, yes/no SQs can also be answered with *I don't know*, *Maybe*, etc.

[31] For the purposes of this subsection, I ignore the possibility that the tag in an alternative SQs undergoes focus-fronting; as discussed in subsection 4.1, some details of the analysis of the syntax of alternative questions are not clear at this point. This does not affect the predictions of the analysis discussed here. The felicitous answers listed in (46c) do not exhaust all possible answers, which, as expected, can also include *Neither*, *Both*, etc.

b. Qué árbol plantó Juan, un olmo o un haya?
what tree planted Juan an elm or a beech
'What tree did Juan plant, an elm or a beech?'

c. Un olmo. / Un haya. / %Sí. / %No.
an elm / a beech / yes / no

Thus, the tag in an SQs determines the possible answers to the SQ in a straightforward manner, once we assume the ellipsis analysis.[32]

This analysis of ellipsis in the tag can also explain a further property of SQs: the tag typically contains a correlate of the *wh*-phrase. For instance, the tag in a subject SQ is typically understood as a subject, and the tag in an object SQ, as an object:[33]

(47) a. Quién plantó el árbol, Juan?
who planted the tree Juan
'Who planted the tree, Juan?

b. *Quién plantó el árbol, un roble?
who planted the tree an oak
'Who planted the tree, an oak?

(48) a. Qué árbol plantó Juan, un roble?
what tree planted Juan an oak
'What tree did Juan plant, an oak?'

b. *Qué árbol plantó Juan, Pedro?
what tree planted Juan Pedro
'What tree did Juan plant, Pedro?'

Consider, for instance, the subject SQ in (47b). In order to explain its ungrammatical status, we must rule out all possible sources for the tag *un roble* 'an oak'.[34] The following seems the most plausible one, together with the corresponding choice of E′ and F-clo(E):

(49) a. an oak [~~E Juan planted t_{oak}~~]

b. $\text{E}' = \text{F-clo}(\text{E}) = \exists x[\text{Juan planted } x]$

E in this example cannot find a suitable antecedent A in the *wh*-part in (47b). In particular, A cannot be *plantó el árbol* 'planted the tree':

(50) $\text{A}' = \text{F-clo}(\text{A}) = \exists x[x \text{ planted the tree}]$

[32] As expected, the alternative and split questions in (46) can also be interpreted as yes/no questions, given the right intonation (see section 3).

[33] I use the word *typically* in stating this generalization because, as discussed below, it does not always hold. Nevertheless, as shown there, the analysis does make all the right predictions.

[34] Of course, this SQ is grammatical if understood as the (pragmatically odd) question whether an oak planted the tree. The interpretations we need to rule out areones where *un roble* 'an oak' is understood as anything but the subject of *plantó* 'planted'.

A′ does not entail F-clo(E), and E′ does not entail F-clo(A). The same is true for any other constituent of the *wh*-part that we take to be A. In particular, if A is the whole *wh*-part, then $A' = \text{F-clo}(A) = \exists x[x \text{ planted the tree}]$ (see Schwarzschild 1999 on the F-closure of *wh*-questions). As in the previous case, the Focus Condition is not satisfied. If on the other hand, A is simply *plantó* 'planted', then $A' = \text{F-clo}(A) = \exists x \exists y[x \text{ planted } y]$. In this case, E′ entails F-clo(A), but A′ does not entail F-clo(E). Finally, any other choice for the source of the tag, such as *Un ROBLE plant'o Pedro?* 'Did Pedro plant an OAK?' or *Un ROBLE quemó Juan?* 'Did Juan burn an OAK?' would also fail to meet e-GIVENness. Hence the ungrammaticality of (47b).

Two anonymous reviewers point out that there are certain continuations to the *wh*-part that the present analysis predicts should be possible sources of grammatical tags that are not correlates of the *wh*-phrase. Consider first the following question:

(51) Alguien plantó el árbol?
Someone planted the tree
'Did someone plant the tree?'

This question could be uttered as a continuation to the *wh*-part in (47) if the speaker actually calls into question the implicature in the *wh*-part to the effect that someone planted the tree. Interestingly, the present analysis predicts that a version of (51) with focus-fronting of the object is a possible source for a tag following the *wh*-part in (47):

(52) a. the tree $[\sout{\text{E someone planted } t_{\text{tree}}}]$
b. $E' = \text{F-clo}(E) = \exists x \exists y[y \text{ planted } x]$

If we take the antecedent A to be *plantó* 'planted' in the *wh*-part, then $A' = \text{F-clo}(A) = \exists x \exists y[x \text{ planted } y]$, so that A and E meet the mutual entailment required by the Focus Condition. Thus, we predict that the following SQ is grammatical under the context discussed above:

(53) Quién plantó el árbol, el árbol?
who planted the tree the tree
'Who planted the tree, the tree?'

This prediction is borne out, although the judgment is complicated by the unusualness of the context that makes the SQ felicitous. As mentioned above, by uttering the tag the speaker calls into question her own implicature in the *wh*-part that someone planted the tree. It thus requires intonation indicating disbelief in both the *wh*-part and the tag, as opposed to the normal intonation used in information-seeking questions. Although this example does not follow the generalization given above that the tag is a correlate of the *wh*-phrase, the analysis correctly predicts that it is grammatical in certain contexts.

The following question provides another source for a tag that does not follow the generalization mentioned above.

(54) (Y) el arbusto, quién lo plantó?
(and) the shrub who it planted
'(And) the shrub, who planted it?'

As a continuation to the *wh*-part in (47), it would not provide a possible answer to it. Rather, it requires that there be a more general question under discussion, namely *Who planted what?* (among others, Büring 1997; Roberts 1996). In this context, the *wh*-part in (47) and (54) would ask two different subquestions of this more general question.[35] (54) is predicted to be a possible source of a tag following the *wh*-part in (47) under the following analysis:[36]

(55) a. the shrub $[\sout{\text{E who it planted } t_{\text{shrub}}}]$
b. $\text{E}' = \text{F-clo}(\text{E}) = \exists x \exists y [y \text{ planted } x]$

As in the previous example, ellipsis is licensed because E is e-GIVEN. This correctly predicts that the following SQ is grammatical in this type of context:

(56) Quién plantó el árbol? (Y) el arbusto?
who planted the tree (and) the shrub
'Who planted the tree? (And) the shrub?'

To summarize, the previous two cases show that, as predicted by the analysis, the tag need not be a correlate of the *wh*-phrase in an SQ, although this is typically the case.

The ellipsis analysis also explains the following fact about SQs where the tag is a yes/no-question. As with normal yes/no-questions, a negative answer to a yes/no SQ can be followed by a correction that contains a focused correlate of some element in the SQ, but the latter must provide an alternative to the tag; if the correction is a fragment, then it must be an alternative to the tag:[37]

(57) a. Quién plantó el roble, Juan?
who planted the oak Juan
'Who planted the oak, Juan?'
b. No. (Lo plantó) PEDRO.
no (it planted) PEDRO
'No. PEDRO (planted it).'
c. %No. (Plantó) el OLMO.
no (planted) the ELM
'No. (He planted) the ELM.'

[35] For reasons that are not entirely clear to me, the judgments improve if *y* 'and' is used at the beginning of (54) in this context.

[36] Note that (54) involves Clitic Left Dislocation (CLLD) of *el arbusto* 'the shrub'. This is a common strategy employed in this type of context in Spanish (Arregi 2003b). The fact that the remnant of ellipsis is fronted by CLLD, rather than focus-fronting, is not problematic for the present analysis. Although typical tags in SQs do involve focus-fronting, nothing in the analysis prevents the generation of tags from sentences with CLLD. See section 9 for other CLLD sources for tags.

[37] A reviewer notes that other corrections are also possible, such as *No. Juan didn't partake in our tree-planting event*, or *No. Juan planted the elm*, as replies to (57). In these cases, the correction does not offer an alternative to the answer suggested by the tag. The first correction simply negates the suggested answer, and the second one answers a different, but related, question (i.e. *What did John plant?*). These types of corrections are different, and are not subject to the conditions imposed on the corrections given in (57) and discussed below.

In the elliptical continuation, ellipsis must be licensed by the Focus Condition. In the felicitous reply (57b), $\mathrm{E}' = \text{F-clo}(\mathrm{E}) = \exists x[x \text{ planted the oak}]$. Its antecedent A in the *wh*-part of the SQ is *planted the oak* 'plantó el roble', where $\mathrm{A}' = \text{F-clo}(\mathrm{A}) = \exists x[x \text{ planted the oak}]$. On the other hand, in the infelicitous reply (57c), $\mathrm{E}' = \text{F-clo}(\mathrm{E}) = \exists x[\text{Juan planted } x]$, and there is no suitable antecedent in the *wh*-part of the SQ. As pointed out by an anonymous reviewer, we also have to consider the possibility that the antecedent of ellipsis is in the second clause of the SQ (which itself undergoes ellipsis). In this case, $\mathrm{A}' = \text{F-clo}(\mathrm{A}) = \exists x[x \text{ planted the oak}]$, which would be an appropriate antecedent for (57b), but not for (57c). Thus, there is no possible antecedent that would license ellipsis in (57c).[38]

To conclude this section, the biclausal analysis explains certain basic properties of SQs. The hypothesis that the tag is a non-*wh*-question explains the constraints on possible answers to SQs. Furthermore, the hypothesis that the tag is the result of ellipsis licensed by an antecedent in the *wh*-part accounts for the facts that the tag is typically a correlate of the *wh*-phrase, and that corrections following negative answers to yes/no SQs provide alternatives to the tag. Thus, both the *wh*-part and the tag contribute to the semantics of the whole SQ. The syntax of SQs proposed here accounts for these semantic facts in a straightforward way. The rest of the article is dedicated to justifying this syntax.

5 *wh*-movement

SQs involve *wh*-movement. In the biclausal analysis, a *wh*-phrase is fronted to the specifier of CP in the *wh*-part. Camacho (2002), who proposes a monoclausal analysis, provides evidence for this claim by showing that the posited movement obeys some island constraints. In this section, I extend this argument to cover other island constraints, and provide further evidence from Weak and Strong Crossover.

Camacho provides evidence from the Complex NP Constraint and the Subject Condition. Examples (59–61) below illustrate this, and should be compared with the grammatical extraction from an embedded noninterrogative complement clause in (58).

(58) Con qué crees [que EEUU atacó a Iran *t*], con tanques?
with what you.think [that US attacked to Iran *t*] with tanks
'What do you think the US attacked Iran with, tanks?'

(59) *Complex NP Constraint: complement clause*
*Con qué oíste [rumores de que atacaron a Iran *t*], con tanques?
with what you.heard [rumors of that they.attacked to Iran *t*] with tanks
'What have you heard rumors that the they.attacked Iran with, tanks?'

[38] In the non-elliptical continuation, only the alternative to the tag is F-marked, as shown by the fact that it must have focal accent. In Schwarzschild's (1999) framework, this is because everything but the alternative is GIVEN.

(60) *Complex NP Constraint: relative clause*
*De qué tema viste [al político que habló *t*], del paro?
of what topic you.saw [to.the politician that spoke *t*] of.the unemployment
'What topic did you see the politician who spoke about, unemployment?'

(61) *Subject Condition*
*A qué deporte crees que [jugar *t*] es peligroso, al rugby?
at what sport you.believe that [to.play *t*] is dangerous to.the rugby
'What sport do you believe that playing is dangerous, rugby?'

The following examples illustrate the point further with other types of island constraints:

(62) *Coordinate Structure Constraint*

a. *Qué comiste [*t* y patatas], alubias?
what you.ate [*t* and potatoes] beans
'What did you eat and potatoes, beans?'

b. *Qué [[comiste alubias] y [bebiste *t*]], vino?
what [[you.ate beans] and [you.drank *t*]] wine
'What did you eat beans and drink, beans?'

(63) *Adjunct Condition*
*De quién te enfadaste [porque Juan habló *t*], de Pedro?
of who you.got.upset [because Juan talked *t*] of Pedro
'Who did you get upset because Juan talked about, Pedro?'

(64) *Wh-island Constraint*
*Con qué te preguntas [quién atacó a Iran *t*], con tanques?
with what you.wonder [who attacked to Iran *t*] with tanks
'What do you wonder who attacked Iran with, tanks?'

The hypothesis that the *wh*-part involves *wh*-movement is also confirmed by sensitivity to Weak and Strong Crossover:

(65) *Weak Crossover*
*A quién$_i$ cree su$_i$ madre que Juan vio t_i en el parque, a Pedro?
to who$_i$ believes his$_i$ mother that Juan saw t_i in the park, to Pedro?
'Who$_i$ does his$_i$ mother believe Juan saw in the park, Pedro?'

(66) *Strong Crossover*
*A quién$_i$ cree *pro*$_i$ que Juan vio t_i en el parque, a Pedro?
to who$_i$ believes *pro*$_i$ that Juan saw t_i in the park, to Pedro?
'Who$_i$ does he$_i$ believe Juan saw in the park, Pedro?'

The data in this section confirm what seems to be the most obvious fact about the syntax of SQs: the *wh*-part involves *wh*-movement. Both approaches discussed here agree on this point. The following sections discuss the much more opaque syntax of the tag, arguing that it involves ellipsis and movement.

6 Ellipsis in the second clause

In Camacho's (2002) monoclausal approach, the *wh*-phrase and the tag form a constituent before *wh*-movement of the former. After movement, the tag is stranded in the base position of the *wh*-phrase. For instance, (1), repeated below, is derived as in (68) in this analysis:

(67) Qué árbol plantó Juan, un roble?
what tree planted Juan an oak
'What tree did Juan plant, an oak?'

(68) $[_{\text{CP}}\ [_{\text{TP}}$ Juan planted $[_{\text{DP}}$ [what tree] [an oak]]]] $\rightarrow$
$[_{\text{CP}}$ [what tree] planted $[_{\text{TP}}$ Juan t_{planted} $[_{\text{DP}}$ t [an oak]]]]

The biclausal and the monoclausal analysis make different predictions. In the monoclausal approach, the tag is embedded in the *wh*-part, and it should thus behave as such. The prediction of the biclausal approach is somewhat more complicated. The tag is not embedded in the *wh*-part, but in a separate clause containing elided material. Since the antecedent of the elided material is in the *wh*-part, the biclausal approach in fact also predicts that the tag behaves, at least partly, as if it were embedded in the *wh*-part. Adopting standard terminology in the literature, we refer to this property of the tag as *connectivity*.

In this section, I present data illustrating connectivity between the tag and the *wh*-part, drawing heavily on the existing literature on ellipsis in sluicing and sentential fragments. In most cases, connectivity can be explained under either analysis of SQs discussed here (subsection 6.1). However, certain instances of connectivity discussed in 6.2 find a more principled account in the biclausal approach. Finally, the strongest argument for this approach presented in this section comes from the *absence* of certain connectivity effects discussed in 6.3.

6.1 C-command connectivity

The tag behaves as if it were embedded in the *wh*-part with respect to several c-command tests. The first set of tests has to do with Binding Theory (see Morgan (1973); Merchant (2004) for similar data in fragment answers). The tag behaves as if it were embedded in the *wh*-part with respect to Condition A of the Binding Theory. In (69a) the reflexive in the tag must be interpreted as bound by *Juan* in the *wh*-part:

(69) a. Con quién dice Pedro$_j$ que está hablando Juan$_i$, consigo mismo$_{i/*j}$?
with who says Pedro$_j$ that is talking Juan$_i$ with himself$_{i/*j}$
'Who does Pedro$_j$ say Juan$_i$ is talking with, himself$_{i/*j}$?'

b. Dice Pedro$_j$ que Juan$_i$ está hablando consigo mismo$_{i/*j}$?
says Pedro$_j$ that Juan$_i$ is talking with himself$_{i/*j}$
'Does Pedro$_j$ say that Juan$_i$ is talking with himself$_{i/*j}$?'

In the monoclausal approach, this is as expected: the DP *Juan* (but not *Pedro*) c-commands and is in the local binding domain of the reflexive. Under the biclausal approach, the reflexive is the remnant of ellipsis in a non-*wh*-question (69b). It satisfies Condition A by virtue of being locally bound by a DP in the elided part with the same reference as *Juan* in the *wh*-part.

Note, however, that the structure assigned by the biclausal approach to the SQ in (69b) involves movement of the tag to a clause-initial position. More specifically, the claim is that the source of the tag in this example is a yes/no-question where the tag undergoes focus-fronting:

(70) Consigo MISMO$_{i/*j}$ dice Pedro$_j$ que está hablando Juan$_i$?
with himself$_{i/*j}$ says Pedro$_i$ that is talking Juan$_i$
'Does Pedro$_j$ say that Juan$_i$ is talking with HIMSELF$_{i/*j}$?'

This example shows that the explanation in terms of ellipsis holds even under the assumption that the tag undergoes movement. Movement in (70) does not alter the binding possibilities of the reflexive: the sentence is grammatical, and the only reading possible is one where the reflexive is bound by the local subject. Of course, this is the phenomenon commonly know as *reconstruction* (for recent work on reconstruction, see, among many others, Heycock (1995); Romero (1997a); Fox (2000); Sharvit (1999)). As shown by Merchant (2004) for fragment answers, whatever mechanism accounts for reconstruction phenomena in movement constructions can be used to account for connectivity effects in the biclausal approach to SQs. In all examples below, I will therefore directly compare SQs with their nonelliptical counterparts where the relevant constituent undergoes focus-fronting.

Similar connectivity effects can be observed with Conditions B and C, and receive a parallel explanation:

(71) *Condition B*

a. Con quién dice Pedro$_j$ que está hablando Juan$_i$, con él$_{j/*i}$?
with who says Pedro$_j$ that is talking Juan$_i$ with him$_{j/*i}$
'Who does Pedro$_j$ say Juan$_i$ is talking with, him$_{j/*i}$?'

b. Con EL$_{j/*i}$ dice Pedro$_j$ que está hablando Juan$_i$?
with HIM$_{j/*i}$ says Pedro that is talking Juan$_i$
'Did Pedro say that Juan$_i$ is talking with HIM$_{j/*i}$?'

(72) *Condition C*

a. A quién cree *pro*$_{j/*i}$ que Juan vio en el parque, a Pedro$_i$?
to who believes *pro*$_{j/*i}$ that Juan saw in the park, to Pedro$_i$?
'Who does he$_{j/*i}$ believe Juan saw in the park, Pedro$_i$?'

b. A PEDRO$_i$ cree *pro*$_{j/*i}$ que Juan vio en el parque?
to PEDRO$_i$ believes *pro*$_{j/*i}$ that Juan saw in the park?
'Does he$_{j/*i}$ believe Juan saw PEDRO$_i$ in the park?'

The relevant interpretation in (72a) is one where the null pronoun *pro* is coindexed with *Pedro* in the tag. As expected, this interpretation is not possible. This case should be compared with the evidence for Strong Crossover presented in section 5, repeated here:

(73) *A quién$_i$ cree *pro$_i$* que Juan vio t_i en el parque, a Pedro?
to who$_i$ believes *pro$_i$* that Juan saw t_i in the park, to Pedro?
'Who$_i$ does he$_i$ believe Juan saw in the park, Pedro?'

The two sentences in (72a, 73) are identical except for the indices used, indicating two separate (ungrammatical) readings. In (72a) the pronoun in the *wh*-part is coreferential with the name in the tag; this reading can be paraphrased as *who does Pedro believe that Juan saw in the park, Pedro?* This is a Condition C violation, a case of connectivity between the *wh*-part and the tag. On the other hand, the pronoun in the *wh*-part in (73) is bound by the *wh*-phrase; this reading can be paraphrased as *Who is the person* x *such that* x *believes that Juan saw* x *in the park, Pedro?* This is a Strong Crossover violation, which argues for movement in the *wh*-part.

Connectivity can also be observed with respect to scope phenomena (the tests are adapted from Merchant (2004), who finds similar effects in fragment answers). In the following example, the pronoun in the tag is interpreted as if bound by the quantified subject in the *wh*-part:

(74) a. A quién llevó [cada mujer]$_i$ a la escuela, a su$_i$ hijo?
to who took [each woman]$_i$ to the school to her$_i$ son
'Who did each woman$_i$ take to school, her$_i$ son?'

b. A su$_i$ HIJO llevó cada mujer$_i$ a la escuela?
to her$_i$ SON brought each woman$_i$ to the school
'Did each woman$_i$ bring her$_i$ SON to school?'

In the monoclausal approach the pronoun *su* 'his' is c-commanded by *cada mujer* 'each woman'; in the biclausal approach, it is bound by an elided DP whose antecedent is *cada mujer*.

SQs also display scope connectivity with respect to quantifier-quantifier interactions:

(75) A quién golpeó cada policía con su porra, a un manifestante?
to who hit each policeman with his club to a demonstrator
'Who did each policeman hit with his club, a demonstrator?'

This SQ has two readings. In the monoclausal approach, this fact can be captured by assigning two different relative scopes to universal *cada policía* 'each policeman' and existential *un manifestante* 'a demonstrator'. If the universal has scope over the existential, the reading can be understood as asking the question whether for each policeman x there is a (possibly different) demonstrator y such that x hit y. If the existential has wide scope, the reading can be paraphrased as the question whether there is a demonstrator x such that every policeman hit that same demonstrator x. In the biclausal approach, the source of the tag contains an elided universal DP whose antecedent is the universal in the *wh*-part, which explains the ambiguity:

(76) A un MANIFESTANTE golpeó cada policía con su porra?
to a DEMONSTRATOR hit each policeman with his club
'Did each policeman hit a DEMONSTRATOR with his club?'

Thus, the biclausal approach predicts the scope ambiguity in a way similar to the monoclausal approach.

Finally, connectivity is also manifested in opacity effects. The tag can be interpreted as if in the scope of an intensional verb in the *wh*-part, as long as the former is understood as the object of the latter (the test is adapted from den Dikken *et al*. 2000):[39]

(77) a. Qué busca Juan, un unicornio?
what seeks Juan a unicorn
'What does Juan seek, a unicorn?'

b. Un UNICORNIO busca Juan?
a UNICORN seeks Juan
'Does Juan seek a UNICORN'?

The SQ does not entail that unicorns exist, indicating that the tag *un unicornio* 'a unicorn' is interpreted in the scope of an intensional verb. In the monoclausal approach, *un unicornio* is in the scope of *busca* 'seeks' in the *wh*-part; in the biclausal approach, it is in the scope of elided *busca*, just as in the nonelliptical counterpart of the tag

To conclude, all connectivity tests based on c-command relations can be accounted for under both the monoclausal and the biclausal approach. In the following subsection, I discuss connectivity effects related to local dependencies, arguing that they receive a better account in the biclausal approach.

6.2 Selection and connectivity

In this section, I discuss examples of SQs where the tag seems to be in some sort of local dependency relation with an element in the *wh*-part. For instance, in 4.3 we saw that the tag in the following SQ must be understood as the object of the verb in the *wh*-part:

(78) Qué árbol plantó Juan, un roble?
what tree planted Juan an oak
'What tree did Juan plant, an oak?'

Furthermore, the *wh*-phrase must be in the exact same local dependency relation to the verb. The latter fact is accounted for in the biclausal approach in a straightforward manner: in the example above, the *wh*-phrase is generated as the object of the verb. On the other hand, the dependency between the tag and the element in the *wh*-part is explained as case of connectivity: the tag is in a local dependency relation with

[39] These authors apply this connectivity test to (specificational) pseudoclefts, where, they argue, the predicate is the remnant of ellipsis (see also Ross 1972; Schlenker 2003).

an elided element whose antecedent is in the *wh*-part. In the example above, the tag is the object of elided *plantó* 'planted'. The fact that the tag undergoes movement in the second clause does not alter this explanation, since, as is well-known, local dependencies (or, at least the ones discussed here) are preserved under movement.

This type of connectivity between the tag and elements in the *wh*-part can be confirmed by two related connectivity tests. The first type of example has to do with case-matching effects; the *wh*-phrase and the tag must have the same grammatical case when they are DPs (see Ross 1969; Hankamer 1979; Morgan 1989; Merchant 2001, 2004 for similar effects in sluicing and fragment answers):

(79) a. Quién limpió la habitación, { tú / *a ti }?
who cleaned the room { you.NOM / you.ACC }
'Who cleaned the room, you?'

b. A quién vio Juan en el parque, { a mí / *yo }?
to who saw Juan in the park { me.ACC / I.NOM }
'Who did Juan see in the park, me?'

The *wh*-phrase in (79a) is the subject of finite *limpió* 'cleaned'; the tag is the subject of elided *limpió*, and must therefore be nominative. Similarly, the *wh*-phrase in (79b) is the direct object of *vio* 'saw', and, accordingly, the tag must be accusative.[40]

Similar effects can be observed in cases where the *wh*-part contains a verb that selects a complement headed by a lexically specific preposition. For instance, *pensar* 'think' selects for *en* 'in', and *soñar* 'dream' selects for *con* 'with':

(80) a. En qué piensas, { en / *con } el perro?
in what you.think { in / with } the dog
'What are you thinking about, the dog?'

b. Con qué soñaste, { con / *en } el perro?
with what you.dreamed { with / in } the dog
'What did you dream about, the dog?'

Both the *wh*-phrase and the tag must be headed by *en* in (80a), and by *con* in (80b).

It is not clear how the monoclausal approach can explain these dependencies. The main claim put forth in Camacho (2002) is that the tag and the (trace of the) *wh*-phrase form a constituent. He suggests two different ways of implementing this hypothesis. The first possibility is that the tag is adjoined to the *wh*-phrase (headedness is marked with subscripting):

(81) Qué compraste, un libro?
what you.bought a book
'What did you buy, a book?'

[40] I assume that the so-called 'personal *a*' in Spanish direct objects is an accusative case morpheme. Alternatively, it could be taken to be an animacy marker, or a preposition (see Jaeggli 1982; Suñer 1988; Torrego 1998 for discussion). These details do not affect the basic point in the text: in object (not subject) position, personal pronouns (among other types of DPs) must be preceded by *a* in Spanish. By hypothesis, the tag in (79a) is a subject, so *a* is not possible; in (79b) the tag is a direct object, so *a* is obligatory.

(82) [$_{VP}$ bought [$_{DP_1}$ what$_1$ [$_{DP}$ a book]]]]

The second possibility is that (part of) the tag is the subject of a small clause whose predicate is the *wh*-phrase:

(83) [$_{VP}$ bought [$_{DP_1}$ a [$_{XP}$ book [X what$_1$]]]]

What we need to capture is the fact that both the *wh*-phrase *qué* 'what' and the tag *un libro* 'a book' are understood as objects of *compraste* 'bought'. The tag and the *wh*-phrase form a constituent, and it is this constituent that is in object position. Strictly speaking, neither the *wh*-phrase nor the tag are in object position. Since, under both implementations sketched above, the *wh*-phrase is, in some sense, the head of the larger constituent, we might take this to mean that the *wh*-phrase is the object of the verb. This predicts that the tag should not behave as the object of the verb. This prediction is not borne out, as shown by the case and preposition selection facts discussed above (79–80). Similarly, an implementation of the monoclausal approach that would make the tag the head instead of the *wh*-phrase would make the wrong prediction that the *wh*-phrase would not behave as the object of the verb. For instance, the initial preposition in (80a) must be *en*, not *con*.

Nevertheless, we could imagine mechanisms that would ensure that both the tag and the *wh*-phrase are in some sense the object of the verb. For instance, one could propose something similar to what is needed in coordinate structures:

(84) El piensa { en / *con } perros y { en / *con } gatos.
he thinks { in / with } dogs and { in / with } cats
'He is thinking about dogs and cat.'

Both conjoined PPs must satisfy the selectional restrictions of the verb, since both are in some sense objects of the verb. However, there is no independent reason to suggest that SQs are similar to coordinate structures in terms of structure or interpretation. For instance, SQs do not involve a coordinating particle, and they always involve extraction of a constituent, the *wh*-phrase, which would violate the Coordinate Structure Constraint if it formed some kind of coordinate structure with the tag.

It seems, then, that whatever mechanism is invoked by the monoclausal approach to represent these local dependency relations, it would be highly *ad hoc*. Therefore, we can see the data presented here as further evidence for the biclausal approach.

6.3 Nonconnectivity effects

Further arguments for ellipsis comes from certain cases of *lack* of connectivity between the tag and the *wh*-part. These provide strong evidence against the monoclausal analysis, since it makes very strong predictions about connectivity that are not borne out.

The first case is standardly referred to in the ellipsis literature as *Vehicle Change* since Fiengo and May (1994). In elliptical constructions, an elided name does not cause a Condition C violation when c-commanded by a coreferential pronoun. The following illustrates the phenomenon with a Spanish fragment answer (see Merchant 2004 for similar examples in English):

(85) Quién leyó el libro de Juan$_i$?
who read the book of Juan$_i$
'Who read Juan's$_i$ book?'

a. Él$_i$.
he$_i$
'Him$_i$.'

b. *Él$_i$ leyó el libro de Juan$_i$.
he$_i$ read the book of Juan$_i$
'He$_i$ read Juan's$_i$ book.'

Under an ellipsis approach to fragment answers, the answer in (a) and the sentential answer in (b) might be expected to have the same structure. However, the full sentential answer is ungrammatical due to a Condition C violation, but the fragment answer is not. Several accounts of this phenomenon have been proposed in the literature (Fiengo and May 1994; Merchant 2001 and references cited there). The gist of these proposals is that conditions on ellipsis allow the unpronounced material in the fragment answer to contain a pronoun instead of the name:

(86) a. Él$_i$ leyó su$_i$ libro.
he$_i$ read his$_i$ book
'He$_i$ read his$_i$ book.'

b. he$_i$ ~~read his$_i$ book~~

In Merchant's (2001) account of ellipsis, which is the one adopted here, this is due to the lack of a syntactic identity requirement. Ellipsis of *leyó su libro* 'read his book' is licensed because it is e-GIVEN with *leyó el libro de Juan* 'read the book of Juan' as antecedent (see section 4.2).[41]

Given this, it is not surprising that a parallel SQ is grammatical:

(87) Quién leyó el libro de Juan$_i$, él$_i$?
who read the book of Juan$_i$ he$_i$
'Who read Juan's$_i$ book, him$_i$?'

The tag does not cause a Condition C violation, since the coindexed DP in the ellipsis site can be a pronoun instead of a name.[42]

[41] Chung (2006); Merchant (2007) argue that some syntactic identity is required in ellipsis. Note, however, that this does not weaken the argument presented here. Vehicle Change and the other nonconnectivity effects discussed here are general properties of ellipsis constructions. The fact that SQs display these effects provides an argument for an ellipsis analysis of SQs, independently of the details of the analysis of ellipsis.

[42] An anonymous reviewer points out that coreference is not possible in a sentence like (87) where the pronoun and the name are switched (ia). This seems like a counterexample to the biclausal analysis, since the source of the tag does allow coreference (ib).

(i) a. *Quién leyó el libro de él$_i$, Juan$_i$?
who read the book of him$_i$ Juan$_i$
'Who read his$_i$ book, Juan$_i$?'

On the other hand, the monoclausal approach does not predict lack of Condition C effects in SQs. According to this analysis, the tag and the trace of the *wh*-phrase in (87) form a constituent in sentence-final subject position:

(88) $[_{CP}$ who read [the book of Juan$_i$] [t_{who} he$_i$]]

Thus, (87) must be compared with a parallel VOS sentence that is not an SQ, such as the following *wh*-question:

(89) *Cuándo leyó el libro de Juan$_i$ él$_i$?
when read the book of Juan$_i$ he$_i$
'When did he$_i$ read Juan's$_i$ book?'

The VOS order in Spanish triggers a Condition C violation.[43] Under the assumption that VOS is derived by movement of the object to the left of the subject (Ordoñez 2000; Zubizarreta 1998), the Condition C effect is the result of reconstruction:

(90) when read $[_{Obj}$ the book of Juan$_i$] he$_i$ t_{Obj}

The pronominal subject c-commands the name in the object in its reconstructed position, which causes the Condition C violation in (89). Since the SQ in (87) and (89) have parallel structures in the monoclausal approach, the lack of Condition C effects in the SQ is unexpected.

Note, however, that the tag does not strictly c-command the trace of the moved object in (87), since it is contained in a constituent that also contains the trace of the *wh*-phrase:

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b. Juan$_i$ leyó el libro de él$_i$
Juan$_i$ read the book of him$_i$
'Juan$_i$ read his$_i$ book?'

Although I am not sure I agree with the reviewer's judgment for (ib), I believe that (ia) is not possible for a very different reason that has nothing to do with the anaphoric relation between *Juan* and the elided pronoun in the second clause; what rules (ia) out is the cataphoric relation between the pronoun in the first clause and *Juan*. We can show that this cataphoric relation is not possible in similar contexts without ellipsis:

(ii) a. *Quién leyó el libro de él$_i$? Juan$_i$ leyó el libro de él$_i$?
who read the book of him$_i$ Juan$_i$ read the book of him$_i$
'Who read his$_i$ book, Juan$_i$ read his$_i$ book?'

b. *Quién leyó el libro de él$_i$? Juan$_i$ leyó el libro de María?
who read the book of him$_i$ Juan$_i$ read the book of María
'Who read his$_i$ book, Juan$_i$ read María's book?'

(iib) is especially informative, since it shows that what rules out (ia) and (iia–b) is coreference between *Juan* and the pronoun in the first clause, not the one in the second clause (which is absent in (iib)).

[43] An anonymous reviewer judges sentences similar to (89) as grammatical, especially if the subject pronoun is focused. My own judgment, and that of my informants, is that (89) and similar sentences are ungrammatical whether the pronoun is focused or not. Interestingly, the sentence improves considerably if *él* 'he' is replaced by emphatic *él mismo* (literally, *he same*), whose properties as a pronoun are not clear. In any case, the argument in the text can only be tested with speakers for whom (89) is ungrammatical; the prediction, which is borne out, is that (87) is grammatical for these speakers.

(91) $[_{CP}$ who read $[_{Obj}$ the book of Juan$_i$ $]$ $[$ t_{wh} he$_i$ $]$ t_{Obj} $]$

One might argue that this is enough to prevent the Condition C violation in the SQ. However, this explanation is not available to the monoclausal approach. There are examples that show that material inside the constituent containing the tag and the trace of the *wh*-phrase c-commands outside of that constituent:

(92) a. Quién visitó a su$_i$ madre, cada senador$_i$?
who visited to his$_i$ mother each senator$_i$
'Who visited his$_i$ mother, each senator$_i$?'

b. $[_{CP}$ who visited $[_{Obj}$ his mother $]$ $[$ t_{who} each senator $]$ t_{Obj} $]$

Since the bound variable interpretation is possible for the pronoun in the object, something within the subject position (either the tag or the trace of the *wh*-phrase) must c-command the trace of the object.[44] Thus, the monoclausal approach cannot blame the lack of Condition C effects in (87) on the absence of the relevant c-command relation.

Another nonconnectivity effect in SQs can be observed in cases where the tag is an object pronoun. Direct objects cannot be doubled by a clitic in most dialects of Spanish. This applies both to objects in their base position and objects displaced by *wh*-movement or focus-fronting:[45]

(93) a. Juan (*lo) mató a Pedro.
Juan (him) killed to Pedro
'Juan killed Pedro.'

b. A quién (*lo) mató Juan?
to who (him) killed Juan
'Who did Juan kill?'

c. A PEDRO (*lo) mató Juan?
to PEDRO (him) killed Juan
'Did Juan kill PEDRO?'

One of the exceptions to this generalization is strong pronouns; they must be clitic doubled, both in their base position and when focus-fronted:

(94) a. Juan *(lo) mató a él.
Juan (him) killed to him
'Juan killed him.'

b. A ÉL *(lo) mató Juan.
to HIM (him) killed JUAN
'Juan killed HIM.'

[44] Note that the bound reading cannot arise from simply coindexing the *wh*-phrase and the pronoun. Crossover effects show that a pronoun can only be interpreted as bound by a *wh*-phrase if the trace of the latter c-commands the former.

[45] This is a highly simplified description of the facts, which is sufficient for the argument presented in the text (among others, Jaeggli 1982; Suñer 1988; Torrego 1998).

In SQs with an object pronoun as the tag, doubling is not possible:[46]

(95) A quién (*lo) mató Juan, a él?
to who (him) killed Juan, to him
'Who did Juan kill, him?'

In the biclausal analysis, this is as expected. The strong accusative pronoun is in the tag, and thus not embedded in the *wh*-part. The object of the overt verb *mató* 'killed' is the *wh*-phrase, which disallows clitic doubling. The second clause must contain a clitic doubling the strong object pronoun, but it is part of the ellipsis site and does not surface.[47]

As in the case of lack of Condition C effects, the monoclausal approach cannot explain the impossibility of clitic doubling in (95). Since the pronoun is in the object position of *mató* 'killed', it should trigger obligatory doubling. As in the previous argument, one might consider saving the monoclausal approach relying on the fact that the tag forms a constituent with (the trace of) the *wh*-phrase. The pronoun is not in object position; it is embedded inside the object. However, this does not make the correct prediction, as far as we can test it. Recall that there are two ways to implement the claim that the tag and the *wh*-phrase form a constituent (see 6.2): either (i) the tag is adjoined to the *wh*-phrase, or (ii) the tag is the subject of a small clause whose predicate is the *wh*-phrase. Under the first possibility, we would expect a pronoun adjoined to an object to not allow clitic doubling. Since there are no constructions in Spanish that have this general structure, the prediction cannot be tested under this implementation of the monoclausal approach.

Under the second implementation, where the tag is the subject of a small clause, the prediction is that an accusative pronoun that is the subject of a small clause cannot be clitic doubled. This prediction is not borne out, even in the case where the predicate of the small clause undergoes *wh*-movement:

(96) a. Juan *(lo) considera a él un idiota.
Juan (him) considers to him an idiot
'Juan considers him an idiot.'

b. Qué *(lo) considera Juan a él?
what (him) considers Juan to him
'What does John consider him?'

The lack of parallel between (95) and (96) (especially (b)) shows that as far as it can be tested, the monoclausal approach cannot explain the impossibility of clitic doubling in SQs with pronominal tags.

[46] Merchant (2001) observes a similar nonconnectivity effect in Romanian in the context of sluicing. I'd like to thank an anonymous reviewer for reminding me of this.

[47] As expected, the same is true for fragment answers. The *wh*-part in (95), without clitic-doubling, can be used as a question whose answer is simply *a él* 'to him'. This fragment answer involves ellipsis of material that contains a clitic doubling the pronominal fragment, but whose antecedent in the question does not contain a clitic. Thus, the argument for ellipsis holds regardless of the need of a syntactic identity condition on ellipsis.

The distribution of Spanish n-words provides a further nonconnectivity argument for the biclausal approach to SQs. These words can appear both postverbally and preverbally. When postverbal, they must be c-commanded by overt negation; when preverbal, they are incompatible with overt negation (among others, Bosque 1980; Laka 1990; Zanuttini 1991; Ladusaw 1992; Herburger 2001; Giannakidou 2006). This is illustrated in the following examples with the n-word *nada* 'nothing':

(97) a. Juan *(no) ha comprado nada.
Juan (not) has bought nothing
'Juan has bought nothing.'

b. Nada (*no) ha comprado Juan.
nothing (not) has bought Juan
'Juan has bought nothing.'

Furthermore, n-words can also be used as fragment answers (Zanuttini 1991):

(98) a. Qué ha comprado Juan?
what has bought Juan
'What has Juan bought?'

b. Nada.
nothing

Interestingly, an n-word can also appear as the tag in an SQ that does not contain negation:

(99) Qué ha comprado Juan, nada?
what has bought Juan nothing
'What has Juan bought, nothing?'

In the biclausal approach, the tag is a sentential fragment. Thus, whatever licenses an n-word in fragments can also license an n-word in the tag of an SQ in this analysis.

However, the tag is embedded in the *wh*-part in the monoclausal approach. Specifically, the n-word in (99) is in postverbal position in the *wh*-part. If that were the case, we would expect the SQ to require sentential negation (cf. (97a)), contrary to fact. Note that this argument is independent of the particular details of the biclausal approach. Even if we assumed an analysis where the tag did not involve ellipsis and/or movement, we would expect n-words to be possible tags to nonnegative SQs, since n-words are licensed in sentential fragments in general.[48]

[48] Giannakidou (1998, 2000); Merchant (2004); Alonso-Ovalle and Guerzoni (2004) argue that the cross-linguistic distribution of n-words (and NPIs in general) in fragments is best accounted for under the movement and ellipsis approach. In particular, Merchant (2004) argues that the impossibility of fronting NPIs in English explains why they cannot be fragment answers. In a previous version of this paper, I attempted to extend this analysis to SQs with limited success, as pointed out by two anonymous reviewers. I have decided not to include it in the present version of the paper, since a full discussion of all the issues involved in the distribution of n-words and NPIs in SQs and fragments in general would take us beyond the scope of the present paper. I leave this as a matter for future research. Some of the issues that arise in English are dealt with by Klecha (2008), who, adopting the analysis of SQs proposed here, accounts for the

6.4 Interim conclusion

To conclude this section, there are a number of connectivity tests that argue for the biclausal approach to SQs. Although the monoclausal approach can account for some connectivity effects, it has no straightforward explanation for all of them, and it fails to account for the lack of connectivity effects typical of sentential fragments.

7 Movement of the tag

In the biclausal analysis, the tag undergoes movement to the left periphery of the second clause, followed by ellipsis of the rest of the sentence. The claim that the tag undergoes movement is intimately tied with the claim that it involves ellipsis. Under the assumption that ellipsis can only target constituents, movement is crucial in deriving the constituent to be elided. For instance, consider the structure of the second clause in the following object SQ:

(100) Qué árbol plantó Juan, un roble?
what tree planted Juan an oak
'What tree did Juan plant, an oak?'

a. [$_{CP}$ an oak$_{F}$ [~~$_{TP}$ Juan [$_{vP}$ planted t_{oak}~~]]]
b. [$_{CP}$ [$_{TP}$ ~~Juan [$_{vP}$ planted~~ an oak$_{F}$]]]

The movement analysis (100a) follows the assumption that only constituents can be elided, since the entire TP is elided. The nonmovement alternative (100b) does not, since the string *Juan plantó* 'Juan planted' is not exhaustively dominated by a single node.

Alternatively, one can view (100b) as involving two operations of ellipsis, each targeting a separate constituent (*Juan* and *plantó*). Although ellipsis in this alternative account only targets constituents, it has an obvious overgeneration problem. As it stands, it is forced to assume elisions of all sorts of constituents that are not otherwise possible. The fact is that, as has been documented exhaustively in the literature, not all constituent types can be elided, and a constrained theory of ellipsis must take this into account. This problem is perhaps most clearly seen with the English counterpart of the SQ in (100). Under this alternative approach to cases of apparent nonconstituent ellipsis, the example involves ellipsis of the subject (and the verb). However, ellipsis of subjects is not possible in English:

(101) *Is planting an oak.

This is an ungrammatical fragment, independently of its context. It cannot be an answer to *What is John doing?*, and it cannot be used as a tag following this *wh*-question

fact that NPIs are grammatical as tags in English SQs (*What did John eat, anything?*) but not in fragment answers. His basic idea is that fronting of the NPI in the source of the fragment is to a position below interrogative C (the NPI-licensor in questions, den Dikken and Giannakidou 2002), but above negation (the licensor of NPIs in statements).

in order to form an SQ. Thus, in the particular case of (100, 101), this alternative theory would need additional stipulations to rule out subject ellipsis in (101) while still allowing it in (100). On the other hand, the movement approach allows us to maintain the constituency condition on ellipsis without the need to posit cases of ellipsis that are not otherwise attested.

Even if we ignore the theoretical appeal of the movement analysis, a number of arguments are presented in this section showing that the tag does undergo movement within the second clause of an SQ. Many of the arguments are familiar from the literature on ellipsis (see especially Ross 1969; Morgan 1973; Merchant 2001, 2004), although one of them is, as far as I know, new (see subsection 7.2). These arguments rule out an analysis along the lines of (100b), interpreted either as ellipsis of nonconstituents or as independent elisions of different constituents.

7.1 Preposition stranding

The first argument for movement of the tag comes from preposition stranding facts. This argument is adapted from Merchant's (2001, 2004) discussion of sluicing and fragments.

Preposition stranding in Spanish is not possible. If a phrase that is the complement of a preposition is fronted, it must pied-pipe the preposition:

(102) a. *JUAN hablaron los médicos con?
JUAN talked the doctors with

b. Con JUAN hablaron los médicos?
with JUAN talked the doctors
'Did the doctors talk with JUAN?'

In an SQ with a *wh*-phrase headed by a preposition, the tag must be headed by the same preposition, which cannot be elided:

(103) Con quién hablaron los médicos, *(con) Juan?
with who talked the doctors (with) Juan
'Who did the doctors talk with, Juan?'

In English, stranding is possible, and, accordingly, the tag does not have to contain the preposition:

(104) Who did the doctors talk with yesterday, (with) Juan?

Under a biclausal analysis, this correlation is expected, since the tag must undergo movement within the second clause. An analysis that does not involve movement of the tag cannot explain this correlation.[49] As discussed in the next two subsections,

[49] As shown in Rodrigues *et al*. (2009) and Vicente (2008), apparent preposition stranding is possible in some elliptical constructions in Spanish. They argue that the source of the fragment in this type of example is a cleft that does not involve preposition stranding. For reasons that are unknown, this strategy is not possible with SQs, as shown by the example in (103). This is a matter in need of further research. I would like to thank an anonymous reviewer for bringing the relevance of this work to my attention.

further arguments for movement (and against the monoclausal approach to SQs) can be devised once we take into account both pied-piping and stranding facts.[50]

7.2 Islands and pied-piping

If the tag undergoes movement within the second clause, this movement is expected to be sensitive to islands.[51] Testing this prediction is not a straightforward matter, since the *wh*-phrase also undergoes movement:

(105) *Por quién has leído el libro escrito, por Pedro?
by who you.have read the book written by Pedro
'Who have you read the book written by?'

(106) a. *Wh-part*: *[$_{CP}$ by who$_i$ you.have read [the book written t_i]]
b. *Tag*: *[$_{CP}$ by Pedro$_j$ you.have read [the book written t_j]]

In this example, both the *wh*-phrase and the tag are extracted from a reduced relative clause island. Therefore, the sentence could be ungrammatical simply by the illegal extraction in the *wh*-part.

A similar problem arises with fragment answers. Since fragment answers are typically answers to *wh*-questions, the reason why an island-violating fragment answer is not felicitous could be attributed to the fact that the corresponding *wh*-question is ungrammatical. The literature contains two tests that circumvent this problem. The first test, used in Morgan (1973); Merchant (2004), involves using fragments that are answers to non-*wh*-questions. This test is not translatable to the present case, since SQs, by definition, involve a first clause that is a *wh*-question. The second test involves multiple *wh*-questions (Merchant 2004), where at least one *wh*-phrase does

[50] A reviewer points out a set of very interesting and potentially relevant facts having to do with so called *orphan prepositions* in French. Some prepositions such as *avec* 'with' can be absent in SQs (ia), which correlates with the fact that they can apparently be stranded (iib) (Zribi-Hertz 1984; French is otherwise a nonstranding language).

(i) a. Avec qui a-t-il parlé, (avec) Marie?
with who has.he talked (with) Marie
'Who has he talked with, Marie?'
b. Marie, il est parti avant de parlé avec.
Marie he is left before of talk with
'Mari, he left before talking to her.'

This apparent stranding has been argued not to involve movement (Zribi-Hertz 1984), since the construction is not island sensitive, as shown in (iib). The correlation between these three facts (optionality in fragments, stranding and island insensitivity) is extremely interesting and might provide new type of evidence for analyses of SQs and fragments in general. For reasons of time and space, I have to leave a more thorough discussion for future research.

[51] Even though, as argued below, movement of the tag in SQs is subject to island constraints, this is not always the case in other elliptical structures. *wh*-movement in sluicing is a well-known case. For different solutions to this puzzle, see Ross (1969); Chung *et al.* (1995); Merchant (2001, 2004); Fox and Lasnik (2003).

not undergo overt movement in some languages. I leave this island test for section 9, which contains a fuller discussion of SQs with multiple *wh*-phrases.

There is another possible test for island sensitivity in the tag, inspired by Morgan (1973: 737–738); Murasugi (1991); Drubig (1994). Although SQs involve movement in both the tag and the *wh*-part, the biclausal analysis does not predict that the two movements have to be identical. Merchant (2004: 685, fn. 8) makes this point with respect to pied-piping vs. stranding in English fragment answers. As illustrated in (104) above, an SQ with a stranded preposition in the *wh*-part is compatible with a tag that is either a full PP or a bare DP. Similarly, pied-piping in the *wh*-part is compatible with either tag:

(107) With whom did the doctors talk yesterday, (with) Juan?

Unlike Spanish, stranding is possible in English. This correctly predicts that the tag in this SQ can lack the preposition, regardless of whether the *wh*-part involves pied-piping or stranding.

If pied-piping of the relative clause island in (105) were possible, we should be able to test for island sensitivity in the tag by simply applying pied-piping in the *wh*-part but not in the tag. However, pied-piping of the relevant type of island is at best marginal in Spanish *wh*-questions:

(108) ??[El libro escrito por quién] has leído?
[the book written by who] you.have read
'The book written by whom have you read?'

This test is best applied in a language that freely allows pied-piping of embedded island clauses. In Basque, clausal pied-piping is possible (Ortiz de Urbina 1989, 1993; Echepare 1997; Arregi 2002, 2003a). This is illustrated in the following examples from Ondarru Basque, where an embedded non-finite clause is optionally pied-piped by a *wh*-phrase:

(109) a. Sein juti esa sendun nai sendule?
who.ABS go.NF said you.had want you.had.COMP
'Who did you say you wanted to go?'

b. [$_{CP}$ who.ABS go.NF] said you.had.COMP [$_{CP}$ want you.had *t*]

(110) a. Sein esa sendun nai sendule juti?
who.ABS said you.had want you.had.COMP go.NF
'Who did you say you wanted to go?'

b. who.ABS said you.had [$_{CP}$ want you.had.COMP [$_{CP}$ *t* go.NF]]

Pied-piping of non-finite relative clause islands is possible, but the stranding option is not available in this case, as expected:

(111) a. Señek idatzitako liburu esa sendun irakurri sendule?
who.ERG write.NF book.ABS said you.had read you.had.COMP
'Who did you say you read the book written by?'

b. [$_{DP}$ who.ERG write.NF book.ABS] said you.had [$_{CP}$ read you.had.COMP *t*]

(112) a. *Señek esa sendun irakurri sendule idatzitako liburu?
who.ERG said you.had read you.had.COMP write.NF book.ABS
'Who did you say you read the book written by?'

b. *who.ERG said you.had [$_{CP}$ read you.had.COMP [$_{DP}$ *t* write.NF book.ABS]]

We can thus use Basque to test for island sensitivity in the tag by using an SQ with pied-piping of an island in the *wh*-part; the following contrast shows that the tag must involve pied-piping as well:

(113) Señek idatzitako liburu esa sendun irakurri sendule ...
who.ERG write.NF book.ABS said you.had read you.had.COMP ...

a. *... Jonek?
... Jon.ERG

b. ... Jonek idatzitako liburu?
... Jon.ERG write.NF book.ABS

'Who did you say you read the book written by, (the book written by) Jon?'

Movement in the *wh*-part does not involve extraction from an island, due to pied-piping. Furthermore, movement of the tag in the second clause does violate the island condition in (a) but not in (b), which explains the contrast in grammaticality:

(114) a. *Jon.ERG said.NF ... [$_{CP}$ read ... [$_{DP}$ *t* written.NF book.ABS]]

b. [$_{DP}$ Jon.ERG written.NF book.ABS] said ... [$_{CP}$ read ... *t*]

Therefore, the contrast in (113) provides a further argument that SQs involve movement of the tag within the second clause.

Note, finally, that the contrast cannot be explained in terms of some sort of syntactic parallelism requirement between the *wh*-phrase and the tag. This point was made with English (107): where pied-piping is optional, pied-piping in the *wh*-part does not entail pied-piping in the tag. The same point can be made with pied-piping of non-island clauses in Basque. The *wh*-question in (109a) involves pied-piping of a complement clause, and can be turned into an SQ with either a bare or a pied-piped tag:[52]

(115) Sein juti esa sendun nai sendule, ...
who.ABS go.NF said you.had want you.had.COMP ...

a. ... Jon?
... Jon.ABS

[52] There is in fact a preference for the bare tag, presumably due to the presence of repeated material in the pied-piping option.

b. ... Jon juti?
... Jon.ABS go.NF
'Who did you say you wanted to go, Jon?'

The contrast between (113) and (115) strongly argues for the hypothesis that the tag undergoes movement within the second clause of an SQ. Neither sentence involves extraction from an island in the *wh*-part, so the contrast must be due to movement of the tag.[53]

To conclude so far, both the preposition stranding and the island data provide strong arguments for movement of the tag within the second clause.[54] In analyses without movement of the tag, including the monoclausal approach, the correlations uncovered above would be left unaccounted for. Further island-based evidence for movement of the tag is provided in subsection 9.1.

7.3 Pied-piping and stranding in the monoclausal approach

The monoclausal approach to SQs cannot explain all the pied-piping and stranding facts discussed in this section. Consider, for instance, (103) (repeated below), which shows that a bare DP tag is not possible if the *wh*-phrase is a PP in Spanish:

(116) Con quién hablaron los médicos, *(con) Juan?
with who talked the doctors (with) Juan
'Who did the doctors talk with, Juan?'

It is not clear whether the monoclausal analysis can explain this fact, since the tag does not undergo movement:

(117) with who talked the doctors [*t* [(with) Juan]]

Without movement of the tag, the only way to force the presence of the preposition in this structure is to somehow enforce identical subcategorization requirements on

[53] In Arregi (2003a) I argue that the pied-piped material in clausal pied-piping undergoes obligatory reconstruction to its base position at LF. Therefore, the piped-piped material in (115) is part of both the ellipsis site and its antecedent at LF, so there is no problem with the Focus Condition on ellipsis. I would like to thank an anonymous reviewer for bringing this issue to my attention.

[54] A reviewer points out an alternative interpretation of the island data, based on Krifka's (1996, 2006) observation that association with focus is island sensitive. For instance, Krifka (2006) presents arguments that the focus-sensitive adverb *only* associates with the relative clause island containing the focus *Jill* in the following example:

(i) John only introduced [the man that JILL_{F} admires] to Sue.

The reviewer interprets this as meaning that focused phrases cannot be inside islands. If this were the case, the island data above could be reinterpreted as the result of the tag being focused. However, this is not the interpretation of the facts given by Krifka. He explicitly argues that the focus in the above example is *Jill*, as witnessed by the fact that the focus can be changed by shifting the placement of focal accent within the island. He argues that the island containing the focus is crucial in associating *only* with the focus, but that the island is not the focus itself. In Krifka's analysis this mediation of the island in association with focus is due to the need of (covert) movement of a phrase containing the focus to a position near *only*.

the *wh*-phrase and the tag (see subsection 6.2). This, however, would fail to account for all the pied-piping and stranding facts discussed here. Specifically, SQs can be constructed where the *wh*-phrase pied-pipes material but the tag does not. This was illustrated with clausal pied-piping in Basque in (115), and with PP pied-piping in English in (107).

This is evidence the pied-piping and stranding facts are not due to some parallelism requirement between the *wh*-phrase and the tag. The correct generalization has to do with movement: the constraints on the form of the tag have to do with constraints on pied-piping and stranding in movement, independently of how these constraints apply to the moved *wh*-phrase. This provides a strong argument for a biclausal analysis where the tag involves movement and ellipsis.

7.4 English complement clauses

Merchant (2004), based on data first discussed in Morgan (1973), develops a further argument for movement in fragment answers based on complementizer deletion facts in English. A similar argument can be applied to SQs. In English, the complementizer *that* is typically optional in declarative complement clauses:

(118) No one believes (that) I'm taller than I really am.

However, it becomes obligatory whenever the clause is fronted:

(119) *(That) I'm taller than I really am, no one believes.

As predicted in the biclausal approach, *that* is also obligatory if the embedded clause is the tag in an SQ:[55]

(120) What does no one believe, *(that) I'm taller than I am?

As pointed out by Marcel den Dikken (personal communication), gapping sentences with complement clause remnants are also relevant to the present discussion. The complementizer must be overt in noninitial conjuncts, but not in the initial one:

(121) Bill said (that) the president was a fool, and Mary *(that) she would never vote for him.

The above argument for the movement analysis of tags is based on the assumption that the obligatoriness of *that* is a symptom that the clause headed by it is in a fronted position. It should, then, be the case that the embedded clause in the noninitial conjunct in (121) is in some moved position. This follows in Coppock's (2001) analysis, where gapping is the result of VP ellipsis preceded by movement of the remnants out of the VP (see also Sag (1976)). Under this analysis, the embedded clause in the second conjunct in (121) undergoes movement:

(122) Mary $[_{\text{CP}}$ that she would never voted for him $]$ $[\sout{_{\text{VP}}\text{ said } t_{\text{CP}}}]$

[55] For reasons discussed in Morgan (1973); Merchant (2004), this test must be made with complement clauses whose content the speaker is not responsible for.

Although the question of what the right analysis of gapping is is far from a settled matter, examples like (121) can be seen as providing an argument for an account in terms of VP ellipsis.[56]

Morgan (1973) and Merchant (2004) discuss another difference between *in situ* and moved complement clauses, which Merchant uses to construct a further argument for movement in fragment answers. As is well-known, a declarative CP cannot be the complement of a preposition; this restriction, however, is lifted if the clause is fronted:

(123) a. *I'm ashamed of that I ignored you.
b. That I ignored you, I'm ashamed of.

As expected, the tag in an SQ can be a clause that is interpreted as the complement of a preposition:

(124) What are you ashamed of, that you ignored me?

On the other hand, it is not clear what the predictions of the monoclausal approach are. In this analysis, the tag is essentially in situ, but we have just seen that CPs that are tags have properties of moved CPs. As with previous arguments, one might think of ways around this problem. For instance, one might want to exploit the fact that the tag is not, strictly speaking, in the relevant complement position, since it is embedded in a constituent that also contains (the trace of) the *wh*-phrase. However, it is hard to see how this would explain the correlation between moved CPs and CP tags discussed above.

To conclude this section, several pieces of evidence argue for a movement analysis of the tag in SQs, as proposed in the biclausal approach. Alternative analyses where movement of the tag is not posited cannot account for the correlations found with movement constructions in the areas of stranding and pied-piping, islands, and English complement clauses. This provides strong evidence against the monoclausal analysis, as well as alternative ellipsis analyses that do not involve movement. Although one might think of alternative ways of explaining each set of data given above in different ways,[57] the fact that movement constructions (and not others, as far as we know) behave exactly the same in all these areas provides a compelling argument for a unified analysis of all the data in terms of movement. Note, finally, that the evidence reviewed in this section is consistent with the tag undergoing either leftward

[56] To compare all analyses of gapping in the literature with respect to this argument would be beyond the scope of the present paper. However, it is worth noting that it is incompatible with Johnson's (2009) approach, where gapping is the result of ATB movement of VP. Under this analysis, both the remnants in noninitial conjuncts and their correlates in the initial conjunct undergo (rightward) movement out of VP. In the case of (121), the CP moves within both conjuncts, followed by ATB movement of the VP containing the trace of the moved clause:

(i) Bill $[_{VP}$ said t_{CP} $]$ ...
... $[$ t_{VP} $[_{CP}$ that the president was a fool $]$ $]$ and ...
... $[$ Mary t_{VP} $[_{CP}$ that she would never vote for him $]$ $]$

It thus wrongly predicts that the complementizer should also be obligatory in the initial conjunct.

[57] For instance, an anonymous reviewer suggests that the island sensitivity of the tag might be explained under a theory in which association with focus is island-sensitive (see footnote 54).

or rightward movement (see footnote 15). An argument that the movement is indeed leftward, as proposed here, is provided in subsection 8.1 below.

8 The position of the tag

The main difference between the two approaches to SQs discussed here is that the tag is embedded in the *wh*-part in the monoclausal approach, but they are separate clauses in the biclausal approach:

(125) *Monoclausal approach*: [$_{CP}$ *wh*-phrase … [t_{wh} tag] …]

(126) *Biclausal approach*: [$_{CP}$ *wh*-phrase … t_{wh} …] [$_{CP}$ tag …]

Both approaches make clearly differing predictions about word order in SQs. The monoclausal approach predicts that material belonging to the *wh*-part may follow the tag. On the other hand, the biclausal approach predicts that the tag must follow the entire *wh*-part.

These predictions can be easily tested in English. For instance, a subject tag in this language is final:

(127) Who read this book, Juan?

In the monoclausal approach, this is not expected. Since subjects must be preverbal in this language, it is wrongly predicted that the tag cannot be final in this SQ. The biclausal approach explains this contrast in a natural way: the tag is a separate clause, so it must follow the entire *wh*-part.

However, several complicating factors make these predictions hard to test in Spanish. The main difficulty is that word order is relatively free in this language. As in English, subject tags are final:

(128) Quién leyó el libro ayer, Juan?
who read the book yesterday Juan
'Who read the book yesterday, Juan?'

If Spanish had a fixed TP-initial position for subjects, this might seem like a counterexample to the monoclausal approach. However, it is well-known that sentence-final (VP-internal) subjects are possible in Spanish:

(129) Cuándo leyó el libro Juan?
when read the book Juan
'When did Juan read the book?'

Thus, the final position of subject tags in SQs cannot be used as an argument against the monoclausal approach.

Nevertheless, word order is not completely free in Spanish. It can be fixed in several ways, and these can be used to test the predictions of the two approaches. In 8.1, I provide two such tests that show that the tag must follow the entire *wh*-part in cases where the monoclausal approach would predict it does not. This subsection

provides further evidence having to do with the properties of the movement of the tag. In 8.2, I discuss apparent counterexamples to the claim that the tag must be final in the SQ, and argue that the biclausal approach can account for them in a natural way.

8.1 The tag is final

In Spanish, the order of direct and clitic-doubled indirect objects (DO and IO respectively) is free within the VP.

(130) Juan le regaló { a Pedro este libro / este libro a Pedro }.
Juan him gave { to Pedro this book / this book to Pedro }
'Juan gave this book to Pedro.'

However, scope possibilities are somewhat restricted depending on word order. A quantified IO can bind a pronoun in a DO in either order, but a quantified DO can bind a pronoun in an IO only in the DO IO order (Demonte 1995; Bleam 2003; Cuervo 2003; de Pedro Munilla 2004):[58]

(131) *IO DO order: only IO can be a binder*

a. Juan le devolvió a cada estudiante$_i$ su$_i$ libro.
Juan him returned to each student$_i$ his$_i$ book
'Juan returned each student$_i$ his$_i$ book.'

b. *Juan le devolvió a su$_i$ dueño cada libro$_i$.
Juan him returned to his$_i$ owner each book$_i$
'Juan returned each book$_i$ to its$_i$ owner.'

(132) *DO IO order: both objects can bind*

a. Juan le devolvió su$_i$ libro a cada estudiante$_i$.
Juan him returned his$_i$ book to each student$_i$
'Juan returned each student$_i$ his$_i$ book.'

b. Juan le devolvió cada libro$_i$ a su$_i$ dueño.
Juan him returned each book$_i$ to his$_i$ owner
'Juan returned each book$_i$ to its$_i$ owner.'

Most work on this topic agrees that these and other facts point to an analysis where the basic order is IO DO. For the purposes of this article, I follow de Pedro Munilla's (2004) analysis, in which the clitic doubled IO is generated higher than the DO within the VP:

(133) [$_{vP}$ Sbj v [$_{VP}$ IO [V DO]]]

[58] Although clitic doubling of IOs is optional, it is preferred to nondoubling. The binding patterns discussed here apply only to sentences with doubled IOs. The facts in sentences without doubling are much less clear. See the references cited above and Perpiñán and Montrul (2006).

If neither object undergoes movement, this results in the IO DO order, and accounts for the fact that the IO can bind a pronoun in the DO in this order (131a). The DO cannot bind a pronoun in the IO (131b) even under QR, since the latter operation is subject to Weak Crossover.

De Pedro Munilla accounts for the DO IO order by proposing an A-movement operation she calls *accusative scrambling*:

(134) $[_{vP}$ Sbj v DO $[_{VP}$ IO V t $]]$

This movement has typical properties of A-movement: (i) it can undergo reconstruction (see, among others, May (1977, 1985); Barss (1986); Fox (2000); Sauerland and Elbourne (2002)), and (ii) it is not subject to Weak Crossover. The possibility of reconstruction explains why the IO can bind a pronoun in the DO (132a); and the lack of Weak Crossover effects accounts for the fact that the DO can also bind a pronoun in the IO (132b).

This analysis also explains why a *wh*-moved DO can bind a pronoun in the IO:

(135) Qué libro$_i$ le devolvió Juan a su$_i$ dueño?
what book$_i$ him returned Juan to its$_i$ owner
'Which book$_i$ did Juan return to its$_i$ owner?'

Given the facts above, the *wh*-phrase must have moved from a position derived by accusative scrambling:

(136) $[_{CP}$ wh$_{DO}$ ... $[_{vP}$ ... t$_{DO}$ $[_{VP}$ IO ... t$'_{DO}$ $]]]$

If the *wh*-phrase moved directly from its base position in t'_{DO}, binding of the pronoun in the IO would not be possible due to Weak Crossover.

Interestingly, this gives us a way to fix the position of the trace of *wh*-movement. In the *wh*-question in (135–136), the trace of the *wh*-moved DO precedes the IO. However, if we form an SQ from this *wh*-question by adding the appropriate tag, the latter is final in the SQ:

(137) Qué libro$_i$ le devolvió Juan a su$_i$ dueño, este?
what book$_i$ him returned Juan to its$_i$ owner this
'Which book$_i$ did Juan return to its$_i$ owner, this one?'

In the monoclausal approach, the tag must be in the position of the trace of the *wh*-movement (t_{DO} in (136)). Since the trace in this example precedes the IO, this analysis wrongly predicts that the tag must precede the IO as well. The tag forms an independent clause in the biclausal analysis, which correctly predicts its final position in this example.[59]

[59] In defense of the monoclausal approach, one might argue that (137) has the following structure, where the tag remains in the base position of the DO and only the *wh*-phrase undergoes accusative scrambling (and further *wh*-movement):

(i) $[_{CP}$ What book$_i$ him returned Juan $[_{vP}$ ... t_i $[_{VP}$ to its owner ... $[$ t_i this $]$ $]]]$

Another way of fixing the position of the trace of *wh*-movement is by taking advantage of the Right Roof Constraint (RRC; see Ross 1967, and Baltin 2006 for an overview of the literature). As in other languages, an object generated in an embedded clause (138) cannot be shifted to the right of matrix material in Spanish (139–140).

(138) Juan le dijo [que vería todos los partidos de su equipo] a Luis.
Juan him told [that he.would.see all the games of his team] to Luis
'Juan told Luis that he would see all his team's games.'

(139) *Juan le dijo que vería a Luis todos los partidos de su equipo.
Juan him told that he.would.see to Luis all the games of his team

(140) *Juan him told [that he.would.see t_i] to Luis [all the games of his team]$_i$

Given this, the following SQ is expected to be ungrammatical under the monoclausal analysis, contrary to fact:

(141) Qué le dijo que vería a Luis, todos los partidos de su equipo?
what him he.told that he.would.see to Luis all the games of his team
'What did he tell Luis he would see, all his team's games?'

Since the tag is final and is understood as the object of the embedded verb, a monoclausal analysis of this SQ would involve cross-clausal rightward movement of the tag:

(142) what$_i$ him he.told [that he.would.see t_i t_j] to Luis [all the games of his team]$_j$

Alternatively, the derivation could involve rightward movement of the constituent containing both the tag and the *wh*-phrase, with subsequent *wh*-movement of *qué* 'what'. Both derivations result in the wrong prediction that (141) is ungrammatical due to the RCC.

On the other hand, the final position of the tag in this example is as predicted in the biclausal analysis. In particular, the second clause in the SQ would involve *leftward* movement of the tag, and ellipsis of everything else:

(143) [all the games of his team]$_i$ ~~him he.told [CP that he.would.see t_i] to Luis~~

Since this is leftward movement, the fact that it crosses a clausal boundary is irrelevant. In particular, focus-fronting that crosses a clausal boundary is possible:[60]

This amounts to the claim that the *wh*-phrase and the tag can be separated by movement processes other than *wh*-movement, by accusative scrambling in this particular case. If this claim were to be argued for independently, proponents of the monoclausal approach would have to test it with SQs where the relevant *wh*-phrase is *in situ*, as in multiple *wh*-questions (see section 9). I leave this as a topic for further research.

[60] An anonymous reviewer points out that both (141, 144) are ungrammatical for their informants, due to the fact that the indirect object *a Pedro* 'to Pedro' gets misparsed as the argument of the embedded (monotransitive) verb *vería* 'would.see'. According to my informants, both sentences are grammatical if there is a pause between *vería* and *a Pedro*, which facilitates the correct parsing. Even if we ignore this detail, what is important for the argument is the correlation between the two types of example; speakers who accept (141) should also find (144) grammatical. I have not found any counterexample to this generalization.

(144) Todos los partidos de su EQUIPO le dijo que vería a Luis?
all the games of his team him he.told that he.would.see to Luis
'Did he tell Luis he would see all his team's GAMES?'

We can conclude that, contrary to the predictions of the monoclausal approach, the tag must be final in an SQ.

To summarize so far, the tag is final in SQs even in cases in which we can ensure that the position of the trace of *wh*-movement is not final in the *wh*-part. This provides a further argument for the biclausal analysis. In addition, the RRC data provide further evidence the tag undergoes leftward movement (as opposed to rightward movement). If the movement were rightward, we would expect it to be subject to the RRC. As shown in (141), this is not the case.

8.2 Apparent counterexamples

In Spanish, there are certain apparent counterexamples to the generalization that the tag must be final in an SQ:

(145) a. Quién llegó tarde ayer, Juan?
who arrived late yesterday Juan
'Who arrived late yesterday, Juan?'

b. Quién llegó tarde, Juan ayer?
who arrived late Juan yesterday

(146) a. Quién habló con Pedro, Juan?
who talked with Pedro Juan
'Who talked with Pedro, Juan?'

b. Quién habló, Juan con Pedro?
who talked Juan with Pedro

The (a) examples, as expected, contain a final tag *Juan* that is a correlate of the *wh*-phrase. However, this correlate is followed by other material in the (b) examples.[61] Examples of this sort are not judged as perfect by native speakers, and there is some variability in judgments. Judgments improve if especially prominent focus accent is placed on the correlate of the *wh*-phrase (*Juan* in both examples). Assuming that they are grammatical, they might be seen as a challenge to the prediction that the tag must be final in an SQ.

Specifically, in all previous examples, the tag always contains only a correlate of the *wh*-phrase. Thus, we might take the instances of *Juan* in the (b) examples above to be the tags in their respective SQs, just as in the parallel (a) examples. This would entail that non-tag material can follow the tag in SQs. I claim that this is the wrong interpretation of these examples: the tag contains not only the correlate of the *wh*-phrase, but also whatever follows it. In the (b) examples above:

[61] As suggested by the placement of the comma, the intonation break must occur before the subject *Juan* in the (b) examples. This is crucial in the analysis of these cases below.

(147) a. $\underbrace{\text{who arrived late}}_{wh\text{-part}}$ $\underbrace{\text{Juan yesterday}}_{\text{tag}}$ (145b)

b. $\underbrace{\text{who talked}}_{wh\text{-part}}$ $\underbrace{\text{Juan with Pedro}}_{\text{tag}}$ (146b)

If this is the correct parse, these examples have the following analysis in the biclausal approach:

(148) a. [$_{\text{CP1}}$ who t_{who} arrived late] [$_{\text{CP2}}$ Juan$_{\text{F}}$ yesterday ~~arrived late~~]

b. [$_{\text{CP1}}$ who t_{who} talked] [$_{\text{CP2}}$ Juan$_{\text{F}}$ with Pedro ~~t_{Juan} talked t_{Pedro}~~]

The intonation pattern of these sentences constitutes an argument for this interpretation of the facts. As suggested by the placement of the comma, the intonation break in these examples is right before the correlate of the *wh*-phrase *Juan*: this marks the break between the *wh*-question CP1, and the yes/no-question with ellipsis CP2. CP1 has the intonation pattern of a *wh*-question, with a final fall. On the other hand, CP2 has the characteristic intonation pattern of a yes/no-question whose initial constituent is F-marked:

(149) JUAN ayer llegó tarde?
JUAN yesterday arrived late
'Did JUAN arrive late yesterday?'

In both this example and the tags in (145b, 146b) focal accent on *Juan* introduces upstep, which results in a rise in pitch that is maintained to the end of the sentence. This is precisely as expected in the biclausal analysis.[62]

Furthermore, ellipsis in the second clause in these cases is straightforward. In (145b, 148a), ellipsis of *llegó tarde* 'arrived late' is licensed with *llegó tarde* in the *wh*-part as antecedent. Ellipsis in (146b, 148b) is licensed in a similar way, although it is not so evident in this case. The elided constituent E is t_i *habló* t_j, and its antecedent A is t_i *habló*. Then:

(150) a. $\text{E}' = \text{F-clo(E)} = \exists x \exists y[x \text{ talked with } y]$

[62] The hypothesized source in (i) below for the tag in (146b) is not as acceptable as the source of the tag in (149) for (145b).

(i) ??JUAN con Pedro habló?
JUAN with Pedro talked
'Did JUAN talk with Pedro?'

In neither case is the focus-fronted constituent right-adjacent to the finite verb. At this point, it is not clear to me what the correct analysis of these facts is. A possibility worth exploring is that the lack of adjacency in (i) is due to the absence of T-to-C movement. If, as suggested in footnote 26 (page 14), ellipsis voids the need for this movement, the contrast between (146b) and (i) would be due to the presence of ellipsis in the former, and the absence thereof in the latter. This might also explain the higher degree of acceptability of (149), under the assumption that the adverb *ayer* 'yesterday' can be generated adjoined to $\overline{\text{C}}$, as opposed to moved elements such as *con Pedro* 'with Pedro' in (i), which are presumably in the specifier of some projection between CP and TP (it is examples of this type that prompted Rizzi (1997) to propose a lower TopP projection below FocP).

b. $A' = \text{F-clo(A)} = \exists x[x \text{ talked}]$

Since talking entails talking with someone and vice versa, A' entails F-clo(E) and E' entails F-clo(A).

The paradigms in (145–146) can be extended with SQs where the correlate in the tag is the last element instead of the first:

(151) ?Quién llegó tarde, ayer Juan?
who arrived late yesterday Juan
'Who arrived late yesterday, Juan?'

(152) ?Quién habló, con Pedro Juan?
who talked with Pedro Juan
'Who talked with Pedro, Juan?'

Although somewhat marginally, speakers find these SQs acceptable. The tags in these examples have an analysis similar to their counterparts in (145b, 146b), but with the order of the two displaced elements reversed:

(153) a. $[_{\text{CP1}}$ who t_{who} arrived late $]$ $[_{\text{CP2}}$ yesterday Juan_{F} ~~arrived late~~ $]$
b. $[_{\text{CP1}}$ who t_{who} talked $]$ $[_{\text{CP2}}$ with Pedro Juan_{F} ~~talked t_{Pedro}~~ $]$

As in the previous examples, the correlate of the *wh*-phrase *Juan* undergoes focus-fronting and thus has focal accent. Since dislocation to the left of focus-fronted elements is possible in Spanish, the position of the non-correlate to the left of the focused constituent is not surprising:

(154) Ayer, JUAN llegó tarde?
yesterday JUAN arrived late
'Did JUAN arrive late yesterday?'

(155) Con Pedro, JUAN habló?
with Pedro JUAN talked
'Did JUAN talk with Pedro?'

In sum, these apparent counterexamples turn out to confirm the prediction made by the biclausal analysis that the tag must be final in an SQ. What distinguishes these SQs from others is not the position of the tag, but the fact that the tag can contain material other than the correlate of the *wh*-phrase. As discussed in section 3, it is not clear what the predictions of the monoclausal analysis are regarding intonation in SQs, so it is not clear whether this analysis can account for these examples.

9 Split questions with multiple *wh*-phrases

SQs can be formed from *wh*-questions with multiple *wh*-phrases:

(156) Quién habló con quién, Juan con Pedro?
who talked with who Juan with Pedro
'Who talked with who Juan with Pedro?'

(157) A quién le regalaste qué libro ayer, a Juan El Quijote?
to who him you.gave what book yesterday to Juan Don Quixote?
'Who did you give what book yesterday, Juan Don Quixote?'

These *multiple SQs* have the structure expected in the biclausal analysis.[63] First, the *wh*-part in (157) contains two *wh*-phrases, and as in the corresponding *wh*-question, only one of them can be fronted:

(158) *A quién qué libro le regalaste ayer, a Juan El Quijote?
to who what book him you.gave yesterday to Juan Don Quixote?
'Who what book did you give yesterday, Juan Don Quixote?'

In addition, the tag contains the correlates of both *wh*-phrases. In the biclausal analysis, they both move leftward, and everything else in the second clause is elided. In (157):

(159) to Juan Don Quixote ~~[TP him you.gave t_{Juan} t_{DQ} yesterday]~~

In this case the identification requirement on ellipsis is satisfied by the constituent *le diste qué libro ayer* 'him you.gave what book yesterday' in the *wh*-part. Under an LF-movement approach to this type of *in situ wh*-phrase (Huang 1982 and much subsequent work), the existential F-closure of this constituent is $\exists x, y$[you gave x to y], as required.

Note, however, that this cannot be a case of multiple focus-fronting, since this is in general not allowed in Spanish:

(160) *A JUAN El QUIJOTE le regalaste ayer?
to JUAN Don QUIXOTE him you.gave yesterday
'Did you give JUAN Don QUIXOTE?'

Instead, it involves Clitic Left Dislocation (CLLD) of the first correlate, and focus-fronting of the second one. Both operations are permitted in the same sentence, with the CLLD-ed element preceding the focused one, as illustrated in the following example without ellipsis:[64]

(161) A Juan, El QUIJOTE le regalaste ayer?
to Juan Don QUIXOTE him you.gave yesterday
'Did you give Juan Don QUIXOTE?'

[63] Spanish speakers often have a preference for pair-list readings of multiple *wh*-questions. Because of this, (156–157) sound somewhat awkward to some speakers. However, judgments improve considerably if the tag contains more than one pair, e.g. *Juan con Pedro y Fulanito con Menganito?* 'Juan with Pedro and Fulanito with Menganito?' As might be expected, the same is true of fragment answers. I assume that these tags (and the corresponding fragment answers) involve multiple clauses, each of which has the syntax for the tags in (156–157) discussed below. For reasons that are not clear to me, the conjunction *y* 'and' is necessary in both types of fragments (answers and SQ tags). I would like to thank an anonymous reviewer for helpful discussion on this issue.

[64] The reverse order, with the focused element preceding the CLLD-ed phrase, is not possible in Spanish.

As predicted by this analysis, the focal accent is on the second correlate in the tag. That this is the correct interpretation of the movement dependencies involved in this type of example is reinforced by the fact that a (nonelliptical) answer to a multiple *wh*-question in Spanish typically involves CLLD of the correlate of one of the *wh*-phrases in the question (Arregi 2003b). For instance, the noninterrogative counterpart of (161) is a natural answer to the question *Who did you give what?*[65]

The fact that multiple SQs are possible is not surprising. However, they have certain interesting properties that allow us to develop further arguments for the biclausal analysis proposed here. In particular, they can be used to provide further arguments for movement in the tag and for the claim that the tag must be final. I discuss these two arguments in the following subsections.

9.1 Island effects in multiple split questions

In section 7, it was argued that the tag in SQs undergoes movement within the second clause. One of the problems that we encountered in providing island evidence for this was the interference of the fact that the *wh*-part also involves movement. An argument was provided based on pied-piping in 7.2 that circumvented that problem. Merchant (2004) provides an additional argument for movement in fragment answers from answers to multiple questions. This argument can be applied to SQs with equal success.

As discussed above, only one *wh*-phrase undergoes movement in the *wh*-part of a multiple SQ; others remain *in situ* (in the overt component). However, the correlates of all *wh*-phrases must undergo movement in the tag. This predicts that multiple SQs are not possible if the *in situ wh*-phrases are inside islands. This prediction is borne out, as illustrated by the contrast between grammatical (162), where the *in situ wh*-phrase is not inside an island, and ungrammatical (163–164), where the *in situ wh*-phrases are inside a relative clause and an adjunct clause, respectively.

(162) Quién cree haber matado a quién, Juan a Pedro?
who thinks have killed to who Juan to Pedro
'Who thinks he killed who, Juan Pedro?'

(163) *Quién quiere contratar a un lingüista que hable qué idioma, ...
who wants hire to a linguist that speaks what language ...
... Juan inglés?
... Juan English
'Who wants to hire a linguist that speaks what language, Juan English?'

(164) *Quién desheredó a Jaimito por haber matado a quién, Juan a Pedro?
who disinherited to Jaimito for have killed to who Juan to Pedro
'Who disinherited Jaimito for having killed who, Juan Pedro?'

[65] In fact, the noninterrogative counterpart of (161) where focused *Don Quixote* is *in situ* is preferred, for reasons given in subsection 4.1.

The ungrammaticality of (163–164) cannot be due to the fact that the *in situ wh*-phrases are inside islands. The corresponding multiple *wh*-questions are grammatical (Huang 1982 and much subsequent work):

(165) Quién quiere contratar a un lingüista que hable qué idioma?
who wants hire to a linguist that speaks what language
'Who wants to hire a linguist that speaks what language?'

(166) Quién desheredó a Jaimito por haber matado a quién?
who disinherited to Juan for have killed to who
'Who disinherited Juan for having killed who?'

In the biclausal analysis, the correlate of the *in situ wh*-phrase does undergo overt movement crossing an island boundary, which explains why the examples are ungrammatical:

(167) *Juan English t_{Juan} wants to hire $[_{\text{DP}}$ a linguist that speaks t_{English} $]$

(168) *Juan to Pedro t_{Juan} disinherited to Jaimito $[_{\text{Adj}}$ for have killed t_{Pedro} $]$

On the other hand, no such movement is posited in the monoclausal approach. Therefore, these examples provide a further argument for the biclausal approach to SQs. Furthermore, they provide evidence against ellipsis analyses where no movement is posited.

9.2 The position of the tag in multiple split questions

The correlates of all *wh*-phrases in multiple SQs are clustered together in the tag at the end of the SQ. This is illustrated in (157), repeated here:

(169) A quién le regalaste qué libro ayer, a Juan El Quijote?
to who him you.gave what book yesterday to Juan Don Quixote?
'Who did you give what book yesterday, Juan Don Quixote?'

As discussed above, this is predicted in the biclausal approach. However, the monoclausal approach does not make this prediction. Since the *wh*-phrase and its correlate are generated forming a constituent in the monoclausal approach, *in situ wh*-phrases in multiple SQs are predicted to remain adjacent to their correlates:

(170) a. *A quién le regalaste qué libro El Quijote ayer a Juan?
to who him you.gave what book Don Quixote yesterday to Juan?
'Who did you give what book Don Quixote yesterday Juan?'

b. *to who him you.gave $[_{\text{DP}}$ what book DQ $]$ yesterday $[_{\text{PP}}$ t_{who} to Juan $]$

The monoclausal approach wrongly predicts this example to be grammatical with the structure shown.

To conclude, multiple SQs provide a further argument for the claim that the tag must be final in an SQ, thereby giving further support for the biclausal analysis.

10 Conclusion

The present article provides argumentation for a biclausal analysis of split questions where the tag is a sentence fragment. A lot of the data discussed here are incompatible with a monoclausal analysis in which the tag is embedded in the *wh*-part, but entirely consistent with the hypothesis that SQs are elliptical structures. Furthermore, the evidence supports the view that elliptical structures involve base-generation of full-fledged syntactic structures, with subsequent deletion of phonological material. Finally, a number of arguments were presented that strongly favor the view that the remnant of an elliptical structure (e.g. the tag in split questions) undergoes movement prior to the application of ellipsis. This approach to split questions is supported by several arguments, and provides a simple account of many of their syntactic, semantic and phonological properties.

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