

Word order variation in Basque as non-feature-driven movement

Abstract

This article examines the issue of word order variation in Basque, which is universally accepted to be sensitive to discourse factors. Most accounts derive this property indirectly, by encoding topic and focus information in designated left-peripheral functional heads, which force movement of the relevant elements (à la Rizzi 1997). However, these analyses depend on a very specific analysis of verb movement in Basque, which is shown to be mistaken. Consequently, these analyses of word order variation become untenable in turn. The alternative developed here rests on the idea that syntactic operations, and movement in particular, need not always be driven by syntactic factors (e.g., feature checking). Specifically, it is argued that the domain of application of the NSR is more restricted in Basque than in other languages. Word order variation is then a consequence of different elements moving so as to receive sentence stress through this modified version of the NSR.

Word order variation in Basque as non-feature-driven movement

1. Introduction

This article is a case study on non-syntactic triggers for movement. The aim is to contribute to the growing body of literature that argues in favour of prosody being able to drive syntactic operations, and movement in particular (e.g., Zubizarreta 1994, 1998; Reinhart 1995; Neeleman & Reinhart 1998; Costa 1998; Stjepanovic 1999; Neeleman & Weerman 1999; Szendrői 2001; Arregi 2001, 2002; van Gelderen 2003). The empirical domain is constituted by word order variation in Basque. This language features two major word order alternations in the clausal domain that have been the object of much debate since the late eighties (see Laka & Uriagereka 1987; Ortiz de Urbina 1989, 1994, 1999a, b; Albizu 1991, 1994; Artiagoitia 1992; Ormazábal et al. 1994; G. Elordieta 1997; Uriagereka 1998; A. Elordieta 2001; Arregi 2001, 2002; Haddican 2004; Irurtzun 2004). However, to my view, none of these analyses provides a satisfactory account of the data. The main reason is that most of them rely on a very specific view of verb movement, namely, head-to-head incorporation. That is, a complex verbal head is formed, which may undergo head movement to a left-peripheral focus/topic projection. Under this view, word order variation is a consequence of feature checking against particular left-peripheral heads.

In this article, I claim that this view is not correct. In particular, I provide arguments that show that the elements forming the putative complex verbal head do not in fact form a constituent at all. Hence, they cannot be moved to left-peripheral positions, whether by head or phrase movement. In turn, this entails that word order variation is not driven by feature checking needs. The alternative I pursue in this article is that the verbal complex is immobile, and word order variation is a function of what moves and doesn't move around it. The formal implementation is based on defining the Nuclear Stress Rule as applying in a more restricted domain in Basque than in other languages. Therefore, word order variation results from the need for certain types of phrases to (not) appear in the domain of the NSR. I argue that this kind of variation in the formulation of the NSR is necessary, since a purely structural version (which assigns stress invariably to the most embedded constituent) runs very short of accounting for all the stress placement phenomena cross-linguistically.

The article is organised as follows: section 2 has a three-fold purpose: first, I lay out the basic set of data I am concerned with; second, I provide a brief summary of previous approaches to these data; finally, I present two strong empirical arguments against those analyses. Section 3, the main bulk of the article, develops the alternative analysis I have sketched in the paragraph above, and explores some of its consequences. Finally, section 4 looks at the cross-linguistic perspectives of the general theory of the syntax-phonology-discourse interactions advocated throughout.

2. The complex head analysis

2.1 The data and an initial analysis

Basque shows two intriguing word order alternations in the clausal domain. The first one is the one between affirmative and negative sentences. The former (1) show an unmarked [S O V Aux] order; for the latter (2), the unmarked order is [S Neg Aux O V]:

- 1) Jonek liburua irakurri du
J book read AUX
'Jon has read the book'
- 2) Jonek ez du liburua irakurri
J no AUX book read
'Jon hasn't read the book'

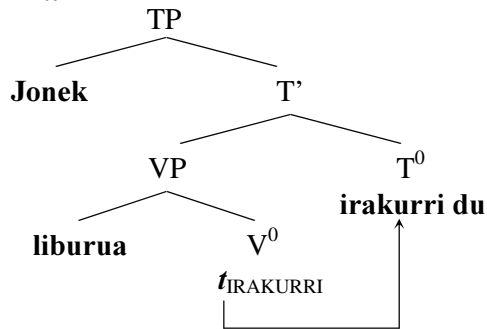
These examples correspond to neutral clauses –i.e., out-of-the-blue clauses that are appropriate replies to a *What happened?* question. The second alternation affects clauses (both affirmative and negative) containing a wh- word or a focalised constituent. In these cases, we observe a V2 effect:

- 3) a. Zer irakurri du Jonek?
what read AUX J
'What has Jon read?'
b. LIBURUA irakurri du Jonek
book read AUX J
'It is the book that Jon has read'
- 4) a. Zer ez du Jonek irakurri?
what no AUX J read
'What hasn't Jon read?'
b. LIBURUA ez du Jonek irakurri
book no AUX J read
'It is the book that Jon hasn't read'

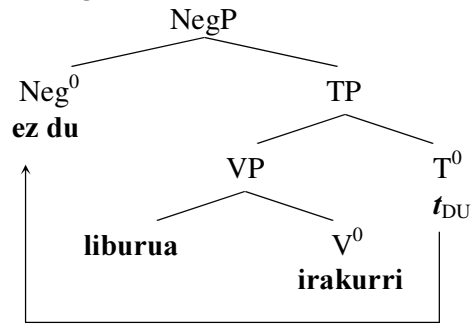
Notice that what moves into the post-focus/wh- position consist not of one element but of two: the auxiliary and either the lexical verb or negation. This has been taken as evidence that [V Aux] and [Neg Aux] are complex heads formed via head-to-head incorporation (cf. Ortiz de Urbina 1989, 1994; A. Elordieta 2001). The representations for (1) and (2) are given below as (5) and (6) respectively¹.

¹ This analysis corresponds to A. Elordieta (2001), to which the reader is referred for a more detailed exposition. Of course, different analyses vary in particular details to different extents. However, a thorough review of the literature is far beyond the scope of this article. For this reason, I take A. Elordieta's analysis as the standard. Also, the more articulated structure of VP and TP is ignored for the sake of exposition.

5) *Affirmative clauses*

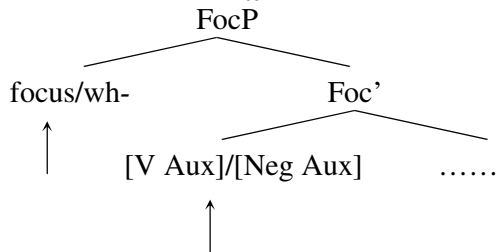


6) *Negative clauses*²



This view of verb movement paves the road to derive (3) and (4) in a manner parallel to the standard analysis of Germanic V2 –i.e., by T-to-C movement plus topicalisation. Ortiz de Urbina (1989) and many others after him assume that Basque has a head initial focus/wh- projection FocP. In order to check the relevant features, the complex heads [V Aux] and [Neg Aux] move to Foc⁰, and the focus/wh- word does to SpecFocP. Obviously enough, X-bar theoretic principles dictate that [V Aux] and [Neg Aux] can only move to Foc⁰ if they are (complex) heads:

7) *Verb second effects*



Another argument in favour of this analysis is that no argument or adverbial whatsoever may appear between the members of [V Aux] and [Neg Aux]³. This restriction follows if these strings are actually complex heads:

- 8) a. * Jonek **irakurri** liburua **du**
 J read book AUX
 ‘Jon has read the book’
 b. * Jonek liburua **irakurri** gaur goizean **du**
 J book read today morning AUX
 ‘Jon has read the book this morning’
 c. * Jonek **ez** liburua **du** irakurri
 J no book AUX read
 ‘Jon hasn’t read the book’

² As can be seen, in negative clauses, V-to-T movement has to be blocked, in contrast to affirmative clauses. To my knowledge, no principled explanation has yet been given for this contrast. Note also that negative clauses involve right-adjunction of the auxiliary to negation, in violation of the Mirror Principle. I will ignore these points in my exposition, though.

³ Except for a few exceptions I will deal with below.

- d. * Jonek **ez** gaur goizean **du** liburua irakurri
 J no today morning AUX book read
 ‘Jon hasn’t read the book this morning’

In short, then, V2 effects and the impossibility of breaking up their adjacency are taken as evidence that [V Aux] and [Neg Aux] form complex heads⁴. In the next section, though, I give two empirical arguments against this conclusion. Therefore, the data I have presented so far have to be accounted for in a different way.

2.2 Against the complex head status of [V Aux] and [Neg Aux]

2.2.1 Ellipsis

The first argument against the complex head analysis is based on Laka’s (1990) observation that, in TP ellipsis constructions, it is possible to elide the auxiliary to the exclusion of negation.

- 9) Jonek liburua irakurri du, baina Mirenek ez [~~du liburua irakurri~~]
 J book read AUX but M no AUX book read
 ‘Jon has read the book, but Miren hasn’t’

Notice that this is not a case of constituent negation. In Basque, negated constituents follow negation, instead of preceding it, as in (9) –see Etxepare (2003):

- 10) Jonek, eta ez Mirenek, irakurri du liburua
 J and no M read AUX book
 ‘It is Jon, and not Miren, who has read the book’

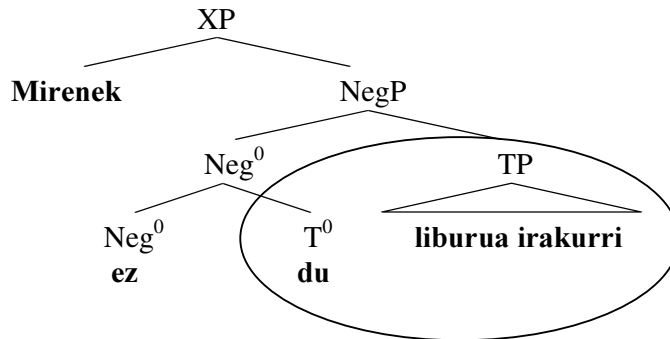
Therefore, I take (9) to be a case of sentential negation, where the constituent immediately below NegP (that is, TP) has been elided. Now, in the complex head analysis, the auxiliary and the rest of the elided material do not form a constituent (11). Consequently, it would be necessary to say either that ellipsis can target a non-constituent (something no other known operation can do⁵), or that TP ellipsis is always followed by a second application of ellipsis to get rid of the auxiliary (which would be difficult to justify)⁶.

⁴ Sometimes (G. Elordieta 1997; A. Elordieta 2001) a third argument is given, namely, that both [V Aux] and [Neg Aux] are phonological units. I find this argument rather vacuous, though, since all that it shows is, precisely, that they are phonological units. This does not entail in any way that they should be syntactic units as well (in the same as, e.g., English genitive –’s forms a phonological unit with the possessor, even though they do not form a syntactic constituent).

⁵ Though see den Dikken, Meinunger & Wilder (2000) for an opposing view.

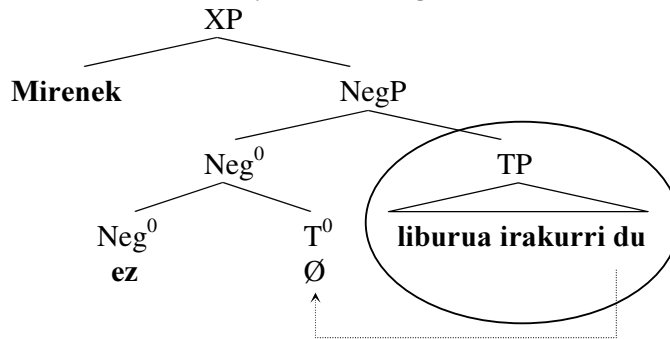
⁶ The remnant of ellipsis, *Mirenek*, can be analysed as occupying any out of several positions: SpecNegP, adjoined to NegP, specifier of a higher topic projection, and so on. I have labelled its mother node as XP since, as far as I can see, its exact landing site is irrelevant for this argument.

11) *Elided material is not a constituent*



With regard to this construction, A. Elordieta (2001) claims that it is possible to maintain the complex head analysis. She assumes a TP deletion analysis. Crucially, she argues that T-to-Neg movement has failed to apply in cases like (9). In her system, this should lead to a derivational crash, since she states that T-to-Neg movement is obligatory. However, the derivation can still converge if we apply TP ellipsis. Her reasoning is as follows: T-to-Neg movement needs to apply because auxiliaries are bound morphemes. Therefore, if they do not cliticise to (in this case) negation, a violation of the Stray Affix Filter would obtain. Nonetheless, since this is a PF violation, it can be obviated through ellipsis, which removes the offending auxiliary. A sketch of the derivation is offered below, where the dotted line represents the movement that should have applied but didn't.⁷

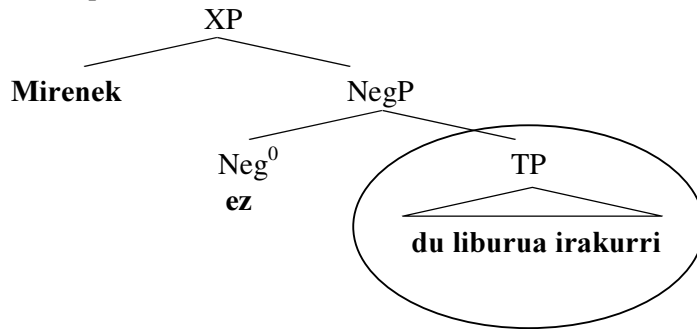
12) *Uncliticised auxiliary removed together with TP*



Note, however, that this proposal requires quite some look-ahead, in that a movement operation can fail to apply in narrow syntax because it will be repaired later at PF. Now, suppose that negation and the auxiliary do not form a complex head, as in (13). This, of course, requires TP to be head initial, so as to derive the Neg-Aux order (which assumption I will justify further in section 3). The advantage of this structure is that it allows for an analysis of (9) in terms of simple TP ellipsis, without reference to neither repair effects or look-ahead:

⁷ Although she does not mention it, this analysis is parallel to Lasnik's (2001) for English pseudo-gapping. See Boeckx & Stjepanovic (2001), Jayaseelan (2001), and Baltin (2002) for further elaboration of Lasnik's proposal. See also the discussion below.

13) *TP ellipsis*



We conclude, then, that treating negation and the auxiliary as separate terminals -rather than as a complex head- opens up a better analysis of constructions like (9)⁸.

2.2.2 Speaker oriented adverbs

At the beginning of this section, I claimed that no argument or adverbial whatsoever may appear between the members of a [V Aux] and [Neg Aux] cluster. The relevant data are repeated here:

- 8) a. * Jonek **irakurri** liburua **du**
 J read book AUX
 'Jon has read the book'
- b. * Jonek liburua **irakurri** gaur goizean **du**
 J book read today morning AUX
 'Jon has read the book this morning'
- c. * Jonek **ez** liburua **du** irakurri
 J no book AUX read
 'Jon hasn't read the book'
- d. * Jonek **ez** gaur goizean **du** liburua irakurri
 J no today morning AUX book read
 'Jon hasn't read the book this morning'

There is an exception, though, constituted by certain speaker oriented adverbs (henceforth SOAs), such as *omen* 'apparently'⁹, which may only appear *inside* the cluster. The following examples illustrate this property.

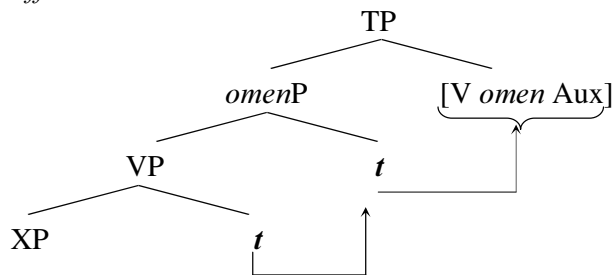
⁸ An alternative for the proponents of the complex head analysis is to adopt Jayaseelan's (2001) suggestion that effects of the kind of (9) do not arise by failure to perform a certain movement, later repaired by ellipsis. Rather, all movements take place, and then the remnant of ellipsis is extracted out of the to-be-elided constituent, moving to some independently motivated position. Therefore, supposing that Basque has a head on top of NegP, call it X, one could argue that negation could excorporate out of [Neg Aux] and incorporate into X. I do not think that this analysis is any more attractive than A. Elordieta's. For one, excorporation without ellipsis is not attested anywhere else in Basque, as far as I know. This suggests that excorporation is an illicit operation that can be rescued by ellipsis. This, however, would lead back to the same look-ahead problem pointed out above: syntax can perform an illicit operation on the knowledge that PF will repair it.

⁹ Other such elements are *ote*, which expresses doubt, and *al*, which functions as a question particle. I will use *omen* as a representative of the whole class.

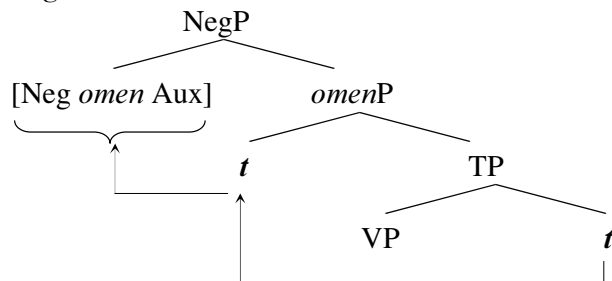
- 14) a. Jonek liburua (*omen) irakurri (✓omen) du (*omen)
 Jon book read AUX
 ‘Allegedly, Jon has read the book’
- b. Jonek (*omen) ez (✓omen) du (*omen) liburua(*omen) irakurri (*omen)
 Jon no AUX book read
 ‘Allegedly, Jon hasn’t read the book’

How is this exception handled in a system that analyses [V Aux] and [Neg Aux] as complex heads? G. Elordieta (1997) and A. Elordieta (2001) argue that *omen* is actually a head, projecting a phrase¹⁰ somewhere in the middle field of the clause. Thus, given the HMC, the lower member of the cluster, must incorporate into *omen* and then carry it along in its way up, from which the correct order obtains. The (simplified) derivations are given below.

15) *Affirmative clauses*



16) *Negative clauses*



As is easy to see, there is an important asymmetry between (15) and (16), in that *omenP* is located below TP in the former, and above TP in the latter. This is not a problem *per se*, since it has been argued in the literature that some adverbs can be merged in more than one place (e.g., witness Cinque’s 1999 discussion of *often*). The problem is that the choice of merger site is dependent on the polarity of the clause: negative clauses only permit the higher slot, whereas affirmative clauses only permit the lower one. This constraint is necessary in this analysis to ensure that *omen* always appears inside the cluster, and nowhere else (see 15). However, I cannot see any non-stipulative way to express this link.

Suppose, for the sake of the argument, that it is somehow possible to constrain the system in exactly this way. Even so, the merger site of *omen* would still be problematic.

¹⁰ For exposition’s sake, I refer to this putative phrase as *omenP*. Recently, though, Haddican (2004) has identified it with Cinque’s (1999) Modal Evidential phrase.

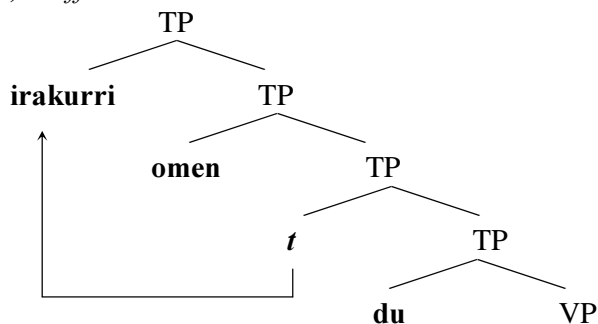
For one, it is not clear that it can be merged that low in the structure. Bear in mind that we are dealing with speaker oriented particles here. In Cinque (1999), they are the topmost elements of the hierarchy. Similarly, Nilsen (2003) argues that their semantics requires a very high attachment site. If Cinque’s and Nilsen’s arguments are correct, and *omen* needs to be introduced in such a high position, the derivations above become suspicious. A indication that the arguments are indeed correct is that, as hinted in the translations to (15), *omen* scopes over the entire clause. This is particularly clear in negative clauses, where we can test the scope interactions of *omen* and negation. The fact is that *omen* takes obligatory wide scope over negation, in spite of their linear position.

- 17) Jonek ez omen du liburua irakurri
 Jon no apparently AUX book read
 ✓ ‘It seems to me that it is not the case that Jon has read the book’
 [*omen* >> *ez*]
 * ‘It is not the case that it seems to me that Jon has read the book’
 [*ez* >> *omen*]

Given the analysis in (17), the obligatoriness of the inverse scope reading is unexpected. In order to derive it one has to assume excorporation of *omen* plus obligatory QR. However, excorporation is condemned by most current views of syntax, primarily due to the fact that (as opposed to incorporation), there are no clear cases of excorporation. Further, QR is taken to be an optional operation, so it is quite stipulative to say that it is obligatory in this particular case. Finally, both operations must apply: if only one of them did, we would not get the desired result.

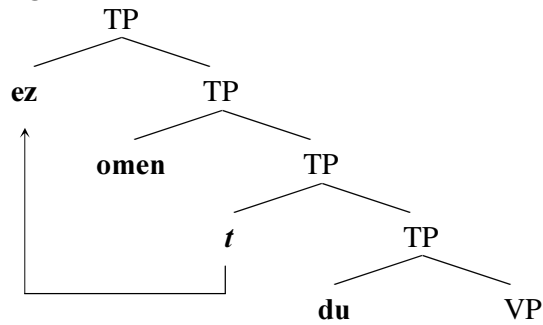
An alternative analysis (Haddican 2004; present author 2004) is to merge *omen* in a very high position, following Cinque and Nilsen. Then, some element moves to its left (the verb in affirmative clauses, negation in negative ones), yielding the right word order. The assumption that the moved element is interpreted in its base position derives the correct scope relations¹¹.

18) *Affirmative sentences*



¹¹ Haddican resorts to feature checking needs to drive the movement, so he has to postulate obligatory reconstruction to the launching site. On the other hand, I argue that the movement is prosodically driven, therefore it has no effect in LF. The choice between either option is not relevant here. The trees above, though, represent my approach, in which everything is simply adjoined to TP. Haddican’s approach is similar in spirit, though he argues in favour of a very articulated left periphery, instead of multiple adjunction. The logic behind both analyses is nonetheless the same.

19) *Negative sentences*



I will assume that an analysis along these lines is correct, since (a) it derives the correct word orders without stipulating different merging sites, (b) *omen* is introduced in a position consistent with its semantics, and (c) as a consequence, we do not need to invoke an obligatory combination of two operations (excorporation and *obligatory QR*), each one of which is already not too elegant on its own. However, as is clear from the representations above, we reach the same conclusion as in section 2.2.1: [V Aux] and [Neg Aux] are not complex heads.

2.2.3 Interim conclusion

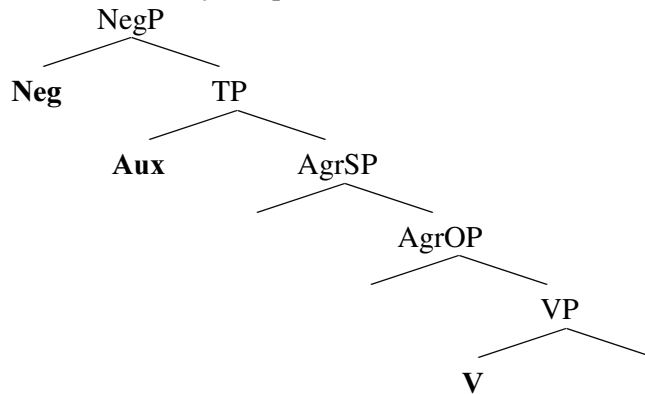
In this section I have argued that [V Aux] and [Neg Aux] do not constitute complex heads. In fact, they are not even constituents. Therefore, they cannot be moved anywhere. This conclusion undermines the analysis presented in section 2.1, which relied heavily on movement to C^0 in order to derive certain word orders. The alternative I explore here is to account for word order variation without resorting to an articulate left periphery.

2.3 Auxiliary clusters revisited

So far, I have argued that [V Aux] and [Neg Aux] are not complex heads. How is their adjacency to be treated, then? I will only offer some remarks here. The interested reader is referred to the present author's (2004) work, where a more explicit theory is developed. Contrary to much of the literature, I assume that Basque is a fully head initial language (as I have already hinted in the previous pages)¹². The structure I will be working with in the remainder of this paper is the following, where the surface positions of the verb, the auxiliary, and negation are marked in boldface.

¹² Analyses of Basque as a head initial language already exist, e.g. Albizu (1994), Ormazabal et al (1994), G. Elordieta (1997), and Haddican (2004). All these analysis have in common that they adopt Antisymmetry as their framework of choice, hence there is no choice but to try and make Basque fit into a head initial structure. My analysis is different in that I assume that a head initial structure is the optimal one for Basque, independently of whether one accepts Antisymmetry or not.

20) *The clause structure of Basque*



I also take tensed verbal forms to be clitics, which is a pretty much uncontroversial claim (see G. Elordieta 1997, Ortiz de Urbina 1999, and A. Elordieta 2001 for discussion and references). Adopting a bottom-up derivational view of syntax, this structure leaves the auxiliary in the first position at the point the TP level is constructed. Bear in mind, though, that tensed verbal forms are clitics, and that, cross-linguistically, clitics are generally not allowed in clause initial position. The following paradigm shows that this property does indeed hold for Basque: an auxiliary occurring in clause initial position is ungrammatical. It must be preceded by either the verb, negation, or the emphatic particle *ba*¹³.

- 21) a. * Du Jonek liburua irakurri
 AUX Jon book read
 b. ✓ Irakurri du Jonek liburua
 read AUX Jon book
 c. ✓ Ez du Jonek liburua irakurri
 no AUX Jon book read
 d. ✓ Ba du Jonek liburua irakurri
 ba AUX Jon book read

Having identified a motivation for fronting of some constituent to the left of the auxiliary, let me elaborate a bit on the question of which one is used in each case. In a nutshell, I would like to propose that merger of a new element (negation) is preferred to movement of an element already present (the verb). The rationale behind this assumption can be summarised as follows: suppose there is an option between merging negation and moving the verb. Either option will result in the clitic not being in second position, so in principle either one could be chosen. Suppose now that verb fronting is chosen. This will leave the clitic in a non-initial position, which is the desired result. However, after this operation has applied, negation still needs to be merged. This second operation, though required by compositional reasons, would not affect the clitic, which is no longer in clause initial position. This sequence of operations would result in the ungrammatical word order [Neg V Aux].

¹³ Laka (1990) analyses *ba* as the affirmative emphatic counterpart of negation. See Ortiz de Urbina (1994) for discussion of this position, though.

Suppose, on the other hand, that negation is merged first, instead of fronting the verb. In this case we achieve two results in one operation: (a) we introduce an element that is required for the derivation to converge, and (b) we prevent the clitic from appearing in first position. Movement of the verb is not required in this case. Its only motivation is to prevent the clitic from appearing in the first position, and this result has already been achieved. As can be seen, merging negation in the first place derives the correct [Neg Aux] order automatically, without any further operations. Therefore, we conclude that merger of negation blocks verb movement by virtue of being a more economical option (I will return to this point in the next paragraph). Consequently, verb movement will only apply whenever no element can be merged –that is, when we are deriving an affirmative sentence, and, obviously enough, no negation is available. In this case, the only option is for the verb to move directly to pre-auxiliary position, much as in Scandinavian stylistic fronting (see Holmberg 2000^{14,15}, Toyoshima 2000, 2001, Matushansky 2003, and the present author’s work 2004, 2005 for a justification of head movement to non-head positions), and that it simply adjoins to TP (or moves into SpecTP: these two options are virtually indistinguishable), since there is no motivation to postulate a special projection to host this movement.

Let us return now to the question of economy. I hinted above that, given a choice between merging negation and fronting the verb, the former is preferred because it involves fewer operations. I believe that the formalisation of this intuition does not necessarily require a global view of derivational economy. Rather, the computation of economy can be done locally, at the particular derivational point where it can make a difference. Toyoshima (2001), refining ideas from Collins (1997), claims that, whenever two or more options are possible at any given point, the computational system makes a choice between them. Toyoshima’s intuition is that the chosen operation is the one that leaves the fewest number of unchecked features. Therefore, the computation of economy is done on a principled basis at every point where the need arises.

This idea needs some refinement, since in this particular case we are not dealing with syntactic features. Let us suppose that Toyoshima’s intuition can be extended to cover all sorts of “inadequacies” (i.e., properties that can make the derivation crash at either interface). Unchecked features would then only be a proper subset of the set of inadequacies. In the case of a negative sentence, we have two inadequacies: negation must be merged (cf. Collins’s 1997 discussion of “integration” as the driving force for merger) and the clitic must be prevented to be in the first position. The two options the

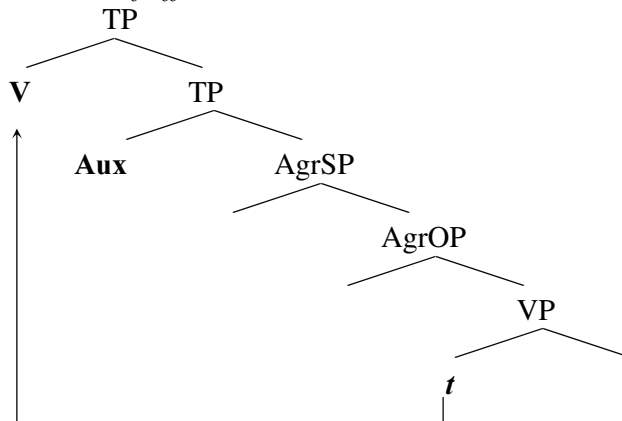
¹⁴ I analyse verb fronting as movement of the bare verbal head, essentially because of certain incorrect predictions made by a remnant VP movement alternative (see present author 2004 for details). If, however, these problems could somehow be solved, a remnant VP movement analysis would be an alternative to this analysis.

¹⁵ Øystein Nilsen (p.c.) points out that this operation is not exactly like Scandinavian stylistic fronting, where verb movement can be blocked if there is a closer element that can fulfil the same function. As a matter of fact, this seems to be the situation in the northern dialects of Basque, where a wh- word or a focused word can block verb movement, giving rise to patterns like (i). Since these dialects are rather understudied, I will not attempt to offer a full analysis here. Nonetheless, we could say that northern dialects represent the unmarked case (i.e., the closest suitable element fronts), whereas standard Basque has a restriction whereby the verb has priority over other elements. Somewhat simplistically, we can encode this restriction in terms of the verb and the auxiliary being part of the same extended verbal projection, unlike wh- words and foci.

(i) Zer du Jonek irakurri?
 what AUX Jon read
What did Jon read?

computational system is confronted with are moving negation or moving the verb. As was argued above, the latter option would simply remove the auxiliary from the first position, without satisfying the integration property of negation. On the other hand, merger of negation would obviously satisfy its integration property, and would also prevent the clitic from appearing in clause initial position. Therefore, merger of negation will be preferred to verb fronting, since it leaves fewer inadequacies in the clause. Verb fronting will only apply when negation is not present (i.e., in an affirmative clause). As I mentioned earlier, I analyse verb fronting as movement of a bare verb to a TP-adjoined position (see fn 13 and associated text for discussion), yielding the following structure

22) *The derivation of affirmative clauses*



With this background, we are now equipped to develop a new analysis of word order variation in Basque.

3. Word order variation in Basque

3.1 On the derivational system

The conclusion of section 2.2 was that V2 effects cannot be analysed as involving head movement to C. Consequently, word order variation in Basque cannot involve a Rizgian left periphery with abstract heads encoding topic and focus features (see Ortiz de Urbina 1999b for such an approach). It therefore follows the recent trend of analysing word order variation in terms of the interaction of prosody and discourse –see Reinhart 1995, Costa 1998, Zubizarreta 1998, Stjepanovic 1999, Szendroi 2001, Arregi 2002, van Gelderen 2003, and references cited there. In my view, this approach is preferable, because it allows for an incorporation of prosodic and discourse factors directly into the derivation, rather than indirectly through designated functional heads. In the latter approach, topics and foci are represented in the syntax as abstract projections where different elements move. However, these projections have no clear syntactic contribution, other than attracting the relevant elements. One must wait until the

derivation is sent to PF and LF to be able to compute the interpretation and intonation contributed by these heads.

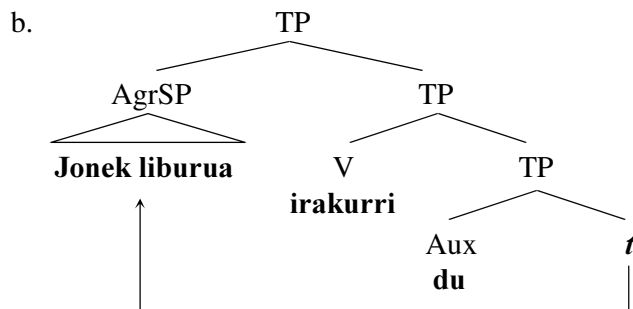
In this article I adopt the model developed by, i.a., Epstein *et al* (1998), Epstein & Seely (2002), and van Gelderen (2003), where LF and PF run along with the syntactic derivation, and can interact with and influence each other. The essential intuition is that, if LF, PF and narrow syntax can “talk” to each other, the effects of topic and focus can be resolved in a much more direct way than if an elaborate left periphery were made use of. Thus, topic/focus-induced movement can be seen as a syntactic means to satisfy the requirements of both LF and PF, in line with the minimalist desideratum (Chomsky 1995a) of syntax being driven by interface requirements.

3.2 Sneak preview

In this section, I show how the different orders are derived given the syntax I have proposed above. For exposition’s sake, I ignore the motivation for the relevant operations. Justifications will be given in section 3.3. The underlying intuition is that [V Aux] and [Neg Aux] occupy very high positions in the structure. Different word orders arise as a function of which constituent(s) move to the left of these clusters, and it is the interplay of interpretation and intonation that drives these movements, or lack thereof.

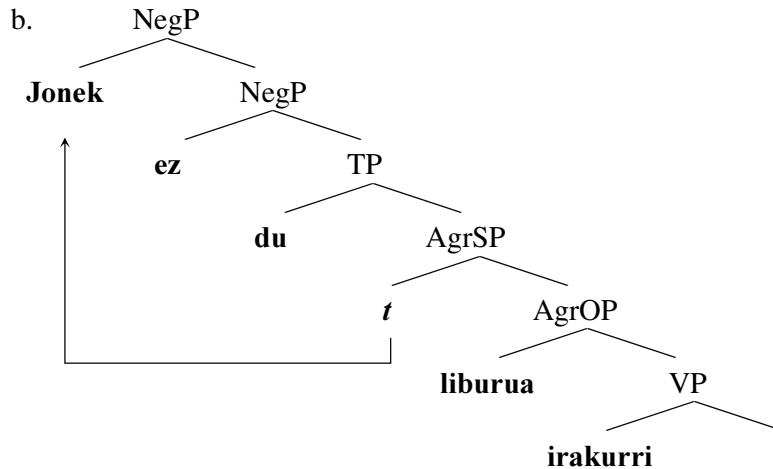
Let us start with neutral affirmative clauses, which display an [S O V Aux] order. Given that, by default, [V Aux] precedes both subject and object, I propose that the observed order is derived by moving the entire complement of TP (namely AgrSP, see 22) to the left of [V Aux]:

- 23) a. Jonek liburua irakurri du
 J book read AUX
 ‘Jon has read the book’



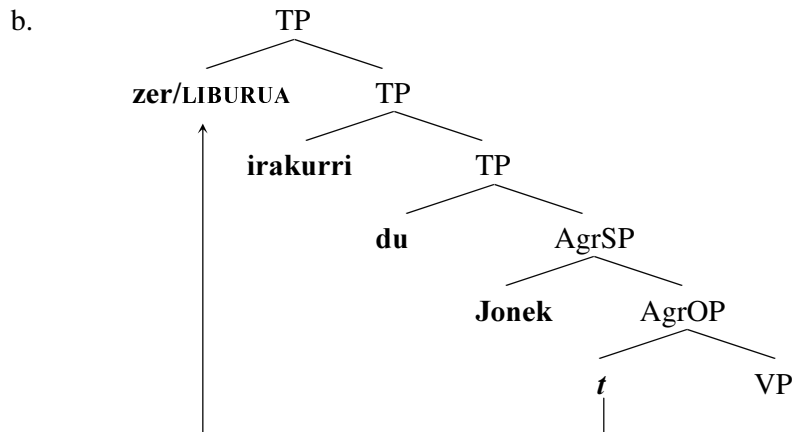
In negative clauses, which display a [S Neg Aux O V] order, it is only the subject that moves leftwards:

- 24) a. Jonek ez du liburua irakurri
 J no AUX book read
 ‘Jon hasn’t read the book’



Finally, V2 effects in both affirmative and negative clauses arise by moving the focus or wh- word to the immediate left of [V Aux] or [Neg Aux], while leaving the rest of the material *in situ*. Here I only give the derivation of V2 effects in affirmative clauses. The derivation in negative clauses is identical, *modulo* the [V Aux]/[Neg Aux] difference.

- 25) a. Zer / LIBURUA irakurri du Jonek
 what book read AUX J
 ‘What has read Jon?/It is the book that Jon has read’



Two points are in order before moving on. First, note that in all these derivations, no use has been made of left peripheral heads. The moved constituents simply adjoin to the root of the tree. Derivations of this kind require the adoption of a view of phrase structure along the lines of Chomsky (1995b), where structure building is seen as a function of merger and movement alone, with no place for X-bar-theoretic notions (see Starke 2001, Collins 2002, and Nilsen 2003 for analyses in this direction).

Second, this analysis reverses the traditional assumption that neutral affirmative clauses represent the unmarked order of the language. As can be seen in (23), in this system these clauses are derived by inverting the underlying order, whereas negative

clauses and V2 clauses are closer to the merged order¹⁶. In the complex head analysis, the assumption is that negation, focus, and wh- words provide “something extra” that forces movements not available in affirmative clauses. The analysis I develop makes the opposite claim: it is the lack of that “something extra” that forces inversion of the type in (23), and its presence which makes further movement unnecessary¹⁷.

3.3 Prosody and word order

3.3.1 Crash course in Basque prosody

The prosody of Basque sentences has been studied in detail in recent years. The descriptive generalization seems to be (cf. A. Elordieta 2001, Arregi 2002, and G. Elordieta 2003) that the main stress of a sentence falls (usually) in the immediately preverbal constituent. Let us examine this claim in more detail, by looking at the stress patterns found in the three types of sentences studied here:

26) *Basque stress patterns:*

- a. **Affirmative neutral clauses:** in transitive clauses, nuclear stress falls on the object (27a); in ditransitive clauses, on the theme object (27b); in intransitive clauses, on the subject (27c); if in any case there is an adverb immediately left-adjacent to [V Aux], it is the adverb that receives nuclear stress (27d-f)
- b. **Negative neutral clauses:** nuclear stress falls on the negative particle *ez* (29)¹⁸
- c. **Focus/wh- clauses:** the focus/wh- word receives nuclear stress (29a-d). If there is no material in front of the [V Aux]/[Neg Aux], these elements receive nuclear stress (29e-f)¹⁹.

- 27) a. Jonek LIBURUA irakurri du
 J book read AUX
- b. Jonek Mireni LIBURUA eman dio
 J M_{DAT} book give AUX
- c. JON etorri da
 J come AUX
- d. Jonek liburua AZKAR irakurri du
 J book quickly read AUX
- e. Jonek Mireni liburua AZKAR eman dio
 J M_{DAT} book quickly give AUX
- f. Jon AZKAR etorri da
 J quickly come AUX

¹⁶ A similar claim is made by Haddican (2004)

¹⁷ It is important to bear in mind, though, that all I am claiming is that neutral affirmative clauses involve movement of a larger number of elements than negative and V2 clauses. I do not mean by this that negative and V2 clauses are more basic in any semantic or cognitive sense. Since they involve less displacement, they simply show the underlying structure of the language in a more accurate way.

¹⁸ More accurately, it falls on the entire [Neg Aux], since these elements form a phonological unit.

¹⁹ In which case they are interpreted as the focus of the clause

- 28) Jonek EZ du liburua irakurri
 J no AUX book read
- 29) a. ZER irakurri du Jonek?
 what read AUX J
 b. LIBURUA irakurri du Jonek
 book read AUX J
 c. ZER ez du Jonek irakurri?
 what no AUX J read
 d. LIBURUA ez du Jonek irakurri
 book no AUX J read
 e. IRAKURRI DU Jonek liburua
 read AUX J book
 f. EZ DU Jonek liburua irakurri
 no AUX J book read

Two more points are necessary to complete the description. First, G. Elordieta (2003:79) points out that “from an observation of the F_0 contour of the sentence [...] we can see that immediately after the syllable with the pitch accent, the pitch level falls and does not rise again”. That is, the material that follows the element receiving nuclear stress is invariably pronounced with a flat intonation. For instance, a question like (29a) hasn’t a final rising intonation, as its English counterpart. Its intonation is identical to the one for (29b). The only thing that marks (29a) as a question is the presence of a wh-word.

Secondly, the sentences in (27) allow for focus spreading. That is, even though the nuclear stress falls in a specific constituent, focus interpretation is not necessarily confined to this specific constituent. Thus, take (27a). Here, the stressed *liburua* may be interpreted as the sole focus of the clause. However, it is also possible to interpret as focus the VP and the IP that *liburua* is contained in. This is not the case for (29), though. In this set of sentences, the stressed constituent is always interpreted as the unique focus of the clause, and no spreading is possible.

3.3.2 The limited domain of the NSR in Basque

So far, it has been shown that, irrespective of the overall word order, nuclear stress is usually assigned to the immediately pre-[V Aux]/[Neg Aux] constituent, whatever this might be. In the few cases where this is not so, stress fall on [V Aux]/[Neg Aux] itself. Therefore, it seems as though there is a connection between stress placement and word order. I propose to formalise this intuition by constraining the Nuclear Stress Rule as follows:

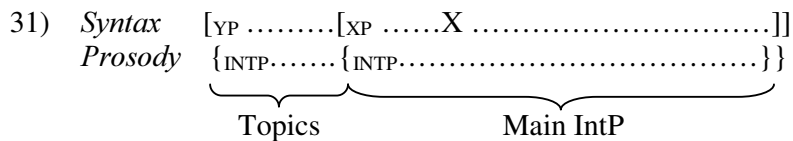
30) *The NSR in Basque*

In Basque, the Nuclear Stress Rule can only operate within the constituent merged at the leftmost edge of the main intonational phrase (IntP henceforth).

The restriction in (30) is the central theoretical claim of this paper. I claim that it is at the core of all word order variation in the Basque clausal domain. Evidently, the big question that arises immediately from (30) is: how is IntP defined? I postulate that

IntP corresponds, roughly, to a clause. More explicitly, an IntP is constituted by the material contained within the projection of the highest phonologically realised head of any given CP²⁰. Constituents adjoined to this projection may also be part of IntP, as will be discussed below. That is, in an affirmative clause like (27a), where T⁰ is the highest phonologically realised head, TP and TP-adjoined material are part of IntP. In (28), where negation is present, NegP and NegP-adjoined material qualify as part of IntP.

One further refinement is necessary. The definition in (30) makes reference to the *main* IntP. After Szendroi (2001), I assume that a clause may contain more than one IntP. The main IntP is what has been defined in the previous paragraph. If the sentence contains topics, these appear as independent prosodic units, which are adjoined to the main IntP. These adjoined IntP extend the main one, but are not contained in it. Under these notions, a clause may be divided as follows, where X represents the highest overt head:



The notion of the NSR presented here is, admittedly, quite baroque. Nonetheless, I don't believe it represents any extraordinary complication in acquisitional terms. For one, it is common knowledge in linguistics that children are sensitive to the prosodic structure of their language from a very early age, well before they produce their first words. Therefore, it is plausible to assume that Basque children can isolate the correct stress pattern without much difficulty. In the following sections, I will show how (30) can derive the data that have been introduced so far, and many other properties of Basque syntax.

3.4 Derivations, part I: V2 effects without movement to C

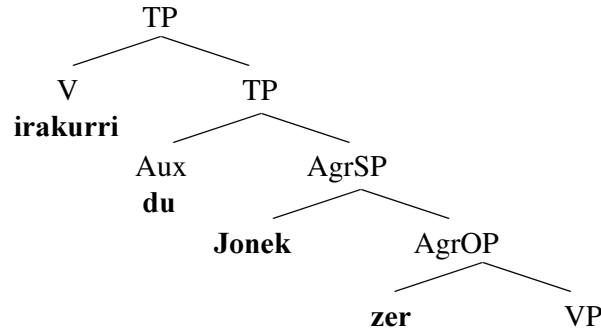
3.4.1 Focus/wh- fronting

As argued above, V2 effects with foci and wh- words arise by moving the focus/wh-word to the left of [V Aux]/[Neg Aux]. In this section, I show how this result can be attained under the definition in (30). For reasons of space, I only refer here to affirmative clauses containing wh- word. The arguments developed here also hold for negative clauses and clauses containing a focalised constituent.

Consider the representation of a clause containing an object wh- word (*zer* 'what') at the point where TP has been just built:

²⁰ Note that this is not parallel to a CP phase. Since (30) is a prosodic rule, it is restricted to the phonetically realised part of a phase.

32)

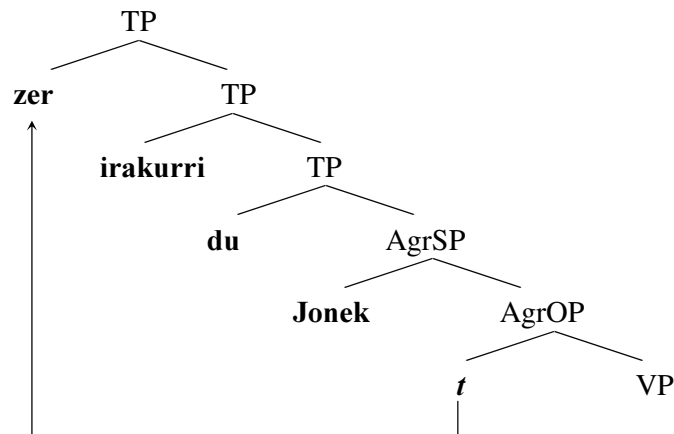


Given the discussion around (30), this constitutes an IntP. The auxiliary is the highest overt head of the clause, therefore material within its projection will be included in the main IntP. According to (31), the leftmost constituent in this IntP will receive nuclear stress. This constituent is the verb *irakurri* ‘read’. Recall that the auxiliary forms a phonological unit with the verb, therefore, it is the whole [V Aux] complex that is perceived as focused. Now, note that (32), as such, is a perfectly well-formed sentence. We have, in fact, derived (29e) above.

The problem with (32), and the motivation for wh- fronting, is that this sentence involves an LF-PF mismatch. The NSR, as defined in (30), assigns stress to [V Aux]. Given the well-known correlation between nuclear stress and focus interpretation (cf. Reinhart 1995, Zubizarreta 1998, Szendroi 2001), it follows that (32) should be interpreted as a verb-focus sentence –which is in fact what (29e) is. However, LF dictates otherwise, since wh- words are interpreted cross-linguistically as the focus of the clause they appear in. Therefore, we find that LF and PF mark different elements as the focus, i.e., the mismatch has been identified.

The obvious way to repair this disagreement is by removing the nuclear stress from [V Aux] and placing it on the wh- word. Given (30), this cannot be done by stress shift. The only possible solution, then, is to move the wh- word to the left of [V Aux], where it can receive nuclear stress, as in (33). Recall that, according to (30), material adjoined to TP is also included in the main IntP. Also, in this way, it is possible to account for the observation that foci and wh- words receive the nuclear stress of the sentence (see above). I assume that the wh- word simply adjoins to TP, since, as has been discussed earlier, there is no motivation to assume an extra projection:

33)



This structure has the immediate advantage that it accounts for the semantics of post-verbal constituents. These constituents are necessarily interpreted in a neutral way, without any kind of discourse-related properties attached to them. This follows from (33), since post-verbal constituents are not affected at all in any way. They simply stay in their base positions. Therefore, no extra interpretational properties are assigned to them²¹.

3.4.2 Discussion

As we can see, V2 effects in Basque are not the result of movement into the left periphery, but are actually derived through the interaction of a number of factors. The one I would like to focus on now is the specific reference in (30) to the left edge of the *main* IntP, rather than the left edge of other minor IntPs. This specification is crucial in deriving V2 effects. This is because Basque V2 is not an absolute phenomenon. By this I mean that, once a focalised constituent or a wh- word appears, the next element must be either [V Aux] or [Neg Aux]. However, there exists the possibility of having a number of topics preceding foci/wh- words. Thus, V2 effects are to be understood as relativised to wh- words and foci, not as referring to the absolute second position. This is exemplified below. Example (34b) is best read with an intonational break between *liburutegian* ‘in the library’, and *zer* ‘what’. This suggests that, as represented in (34c), *liburutegian* forms an intonational unit separate from the one comprising the rest of the sentence:

- 34) a. * Zer liburutegian irakurri du Jonek?
 what library.LOC read AUX J
 ‘In the library, what has Jon read?’
 b. ✓ Liburutegian, # zer irakurri du Jonek?
 library.LOC what read AUX J
 c. {INTP liburutegian {INTPZER irakurri du Jonek}}

In Szendroi’s (2001) terms, the whole utterance in (34b) forms an IntP. However, this unit can be decomposed. The main IntP is composed by *zer irakurri du Jonek*. Topics are (prosodically) adjoined to the main IntP: they extend it, creating a larger IntP, but they are not included in the main one. This is what (34c) is intended to capture. Here can be seen the importance of (30) making reference to the left edge of the *main* IntP, rather than the extended IntP including topics. In the latter case, foci and wh- phrases would be expected to appear in absolute clause initial position. While this would still derive V2 effects in sentences without topics (because the left edge of the main IntP coincides with the clause initial position), it would predict the opposite grammaticality pattern for (34a-b). Given that wh- words/foci need to be clause initial in an absolute sense, topics could appear between them and [V Aux]/[Neg Aux], as in (34a). For this same reason, (34b) would be ruled out, since it the wh- word would not be initial. Thus, in order to derive the correct grammaticality pattern, (30) has to be modelled so that it excludes constituents adjoined to the main IntP.

²¹ This is possibly also a consequence of the low, flat pitch contour exhibited by these sentences, although this latter property does not directly follow from this analysis. Nonetheless, it can be implemented in the form of a Post Focus Reduction rule (Ishihara 2003) or a similar mechanism.

Let us look at how these notions interact. Consider (32) again and suppose that, on top of the object *wh-* word, *liburutegian* is introduced as a topic (i.e., so as to derive 35b). That is, both the *wh-* word and the topic are to appear at the front of the clause, and the resulting order needs to be *topic* >> *wh*, not the reverse. So, going back to the TP level, we find that the left edge of IntP is now occupied by [V Aux]. As in the previous case, there is an element, namely *zer* who needs to appear in that position so as to receive main stress. Therefore, we move it to the front. At this point, both LF and PF are marking the same element as the focus. Now, *liburutegian* is introduced, adjoined to TP as well. If (30) applies at this point as well, it will remove the nuclear stress from *zer* and assign it to *liburutegian*, which is obviously the incorrect result (i.e., it will destroy a licit configuration). Therefore, after *zer* is fronted, the main IntP is “closed off”, and further elements merged with TP are adjoined to the main IntP, as indicated by the intonational break between the topic and the *wh-* word.

The opposite order of operations (namely, topicalisation of *liburutegian* followed by fronting of the *wh-* word) can be easily ruled out given the view of economy of derivation that has already been proposed in this paper. I propose to treat the LF-PF mismatch that causes *wh-* fronting as an “inadequacy”, as discussed in section 2.3. At the derivational point depicted in (32), the system is confronted by two options: fronting of the *wh-* word, and fronting of the topic. The former option will resolve the inadequacy, whereas the latter will not. Therefore, *wh-* fronting always takes place before topic fronting, deriving the impossibility of the *wh-* >> *topic* order.

It is important to stress that this result comes for free, as opposed to what happens in other models. For instance, Ortiz de Urbina (1999b), working with an expanded Rizgian left periphery, is forced to postulate that Basque, in contrast to Italian, has no TopPs below FocP. Arregi (2002), who derives *wh-* questions by rightward movement of non-*wh-* elements, stipulates that rightward movement always targets TP, whereas no such restriction exists in the case of leftward movement. Finally, Reglero (2003) assumes that topics and *wh-* words move to a unique left peripheral C projection, in a multiple specifier configuration. To ensure the *topic* >> *wh-* order, she argues that the *wh-* word must be string adjacent to the C head, which contains a silent focus affix that needs to be attached to a focalised element so as to avoid a PF violation. It is not clear to me, however, how a PF violation can be caused by an unpronounced element. In contrast, in the present approach, we only need to invoke the conjunction of independently motivated factors –namely, (i), the head initial nature of TP in Basque, (ii) the prosodic requirement in (30), (iii) the requirement that *wh-* words bear main stress, and (iv) a local view of derivational economy.

A second good result of this analysis is that it derives the complementary distribution of foci and *wh-* words (cf. Ortiz de Urbina 1999a). As has been claimed above, both foci and *wh-* words need to bear main stress, and they do so by moving to the left edge of IntP, where main stress is assigned. However, by definition, there is only one such position. Therefore, if both a *wh-* word and a focalised constituent are competing for it, one of them will not be able to receive main stress, and the sentence will be ungrammatical (35). This also derives the absence of multiple foci constructions in Basque (36).

- 35) * JONEK zer irakurri du?
 Jon what read AUX
 ‘What has JON read?’

- 36) * JONEK LIBURUA irakurri du
 Jon book read AUX
 ‘JON has read THE BOOK’

A third advantage is that, assuming a derivational view of the syntax-phonology interface, it follows that *wh*- words undergoing extraction out of an embedded clause must touchdown in the left edge of the embedded IntP (recall that I have equated an (extended) IntP with a clause). This can account for certain cyclicity effects. For instance, Ortiz de Urbina (1999a) observes that in cases long distance *wh*- extraction, the embedded clause is verb-initial (37). However, as he also points out, the optimal analysis for (37) is that the embedded clause in V2, only that the first element is the trace of the *wh*- word, giving the illusion of a V1 clause. This means that the *wh*- word must move to the left edge of the IntP at the point when the latter is formed –that is, prosodically driven movement is computed in cyclic way.

- 37) Zer uste duzu [irakurri duela Jonek]?
 what think AUX read AUX.C Jon
 ‘What do you think Jon read?’

A fourth point (described, again, by Ortiz de Urbina 1999) is that the movement in (37) is blocked if the embedded clause contains a fronted focus (38a). This can be explained if, at the level of the embedded clause, both the *wh*- word and the focus were competing for the same position, making (38) akin to (36) at the relevant derivational point. Thus, this sentence constitutes further evidence in favour of a cyclic computation of prosodically driven movement. Example (38b) is provide to show that fronted foci in an embedded clause are independently allowed:

- 38) a. * Zer uste duzu [ATZO irakurri zuela Jonek]?
 what think AUX yesterday read AUX.C Jon
 ‘What do you think that Jon read YESTERDAY’
 b. ✓ Mirenek uste du [ATZO irakurri zuela Jonek liburua]
 M think AUX yesterday read AUX.C J book
 ‘Miren thinks that it is yesterday that Jon read the book’

Fifth, the present analysis also accounts for the existence and distribution of multiple *wh*- questions in Basque²², such as (39). In principle, such constructions should be ungrammatical, for the same reason that multiple foci constructions are. However, Reglero (2003) shows than in examples like (39), only one of the *wh*- words –more specifically, the immediately preverbal one- can be interpreted as non-D-linked. All other *wh*- words must be D-linked. If non-D-linkedness is equated to focus interpretation, and D-linkedness to topic interpretation (see Reglero’s paper for justification), the example below follows. The non-D-linked *wh*- word must appear in the focus position, whereas the non-D-linked one appears in the topic position²³. Therefore, (39) is parallel to (34b).

²² Thanks to Anna McNay (p.c.) for raising this issue.

²³ There is a further restriction, namely, that the order of multiple *wh*- fronted words must be S >> IO >> DO, which is the unmarked order in non-interrogative clauses. Reglero derives it by arguing that they all move to different specifiers of the same head, following the tuck-in hypothesis (Richards 1997).

- 39) Nork_[D-LINKED] zer_[NON-D-LINKED] ikusi du
 who what see AUX
 ‘Who has seen what?’

The sixth phenomenon that falls under the scope of this approach is the one case in which the V2 requirement with *wh-* words can be lifted²⁴. Reglero (2003) shows that *which* phrases, as opposed to simple *wh-* words, need not be strictly left-adjacent to [V Aux]. The pair in (40) is given as a contrast. After Pesetsky (1987), I take *which* phrases to be D-linked, which, under Reglero’s hypothesis described above, means that they behave as topics. Therefore, (40a) is again parallel to (34b) and (39).

- 40) a. ✓ Zein idazle, gaurkoa edo beste arokoa, iruditzen zaizu gidaririk
 which writer today or other period seem AUX guide
 zuzenena hitz kontuetan?
 rightest word issues
 ‘Which writer, present or past, seems to you the best guide in issues of words?’
 b. * Nor, gaurkoa edo beste arokoa, iruditzen zaizu gidaririk zuzenena hitz
 who today or other time seem AUX guide rightest word
 kontuetan?
 issues
 ‘Who, present or past, seems to you the best guide in issues of words?’

A seventh advantage is that this analysis account for the *prima facie* exceptional cross-linguistic status of Basque *wh-* movement. Takano (1996), citing Bach, claims that no language has both clause final complementisers and overt *wh-* fronting. The only exception he cites is, precisely, Basque. However, under the approach developed here, Basque is no longer an exception. As I argued at an earlier point, I take Basque to be uniformly head initial in the clausal domain, the CP layer definitely included in this claim. They only appear to be clause final at times because the rest of the clause has

However, I do not think I can resort to tuck-in here, since this mechanism is based on multiple feature checking against the same head, and I do not resort to feature checking at all here. I will leave this point as an open question.

²⁴ Uriagereka (1998) claims that, under the right conditions, the V2 requirement can be lifted more often, and gives (i) as an example. However, sentences of this sort are judged ungrammatical everywhere else in the literature, as well as by all the speakers I have consulted so far, so I will ignore Uriagereka’s claim.

- i) Nork mahaia bedeinkatuko du?
 who table bless AUX
Who will bless the table?

Interestingly, though, he has a point in that the V2 requirement is not that strictly observed if the *wh-* word is *zergatik* ‘why’. Thus, (ii) is marked but acceptable, in contrast with the sharp ungrammaticality of (3) and (4):

- ii) ??Zergatik zaldunak herensugea hil zuen?
 why knight dragon kill AUX
Why did the knight kill the dragon?

I will leave this exception for future work, simply noting a curious restriction: the orders *why-SOV*, *why-SVO* and *why-OVS* are relative acceptable, but *why-OSV* is ungrammatical for everybody I have asked so far.

moved around them, in a manner similar to (23b). However, underlyingly they are clause initial, thus preserving the accuracy of Takano's claim²⁵.

The eighth (and final) advantage of this analysis is that it sheds light on a paradigm uncovered by A. Elordieta (2001, ch 4). Descriptively, Basque wh- movement causes WCO effects (41a). Focus fronting is more intriguing. It does not cause WCO effects if the focused phrase is a regular DP (41b). However, if it is a quantifier, WCO effects reappear (41c):

- 41) a. * Nor_i agurtu du bere_i aitak t_i?
 who greet AUX his father
 'Who did his father greet?'
 b. ✓ JONEK_i agurtu du bere_i aitak t_i
 Jon greet AUX his father
 'It is Jon that his father greeted'
 c. * Edonor_i salatuko luke bere_i ugazabak t_i
 anybody betray AUX his boss
 'His boss would betray anybody'

This paradigm can be made sense of if we adopt Fukui's (1995:35ff) approach to WCO violations, given below:

- 42) *WCO effects according to Fukui*
 In a configuration [x_i [...*pronoun*_i*t_i*]], the weak crossover effect is observed iff
 (i) Case is not assigned to x_i
 AND
 (ii) x_i is an operator-like element (a wh- phrase or a quantifier)

Fukui's intuition is that WCO effects depend not only on the syntactic configuration, but also on the content of the elements involved²⁶. The illicit configuration that arises from (42) is one in which x_i *t_i* is an operator-variable chain. If x_i *t_i* does not meet this requirement, no WCO effect obtains. Fukui proves this point with examples like the following:

- 43) a. ✓ Everyone_i seems to his_i friends to have been treated t_i badly
 b. ✓ John asked me who_i seemed to his_i friends to have been treated t_i badly

In both examples, the wh- word and the quantifier have been moved over co-indexed pronouns. Crucially, the movement employed is A movement (i.e., NP raising), which does not leave a variable. Consequently, the definition in (42) is not met, and the examples are grammatical.

The Basque paradigm follows this same logic. Examples (41a) and (41c) are ruled out because the fronted elements are quantificational (i.e., a wh- word and a quantifier),

²⁵ It seems to me, though, that for Takano's claim to have some content, other C-final languages, like Japanese, should really be underlyingly head-final, which in principle could constitute an argument against Antisymmetry. I will not go further into this issue here, though.

²⁶ A similar analysis has also been developed, on the basis of independent evidence, by Kidwai (2000) and Bianchi (2001).

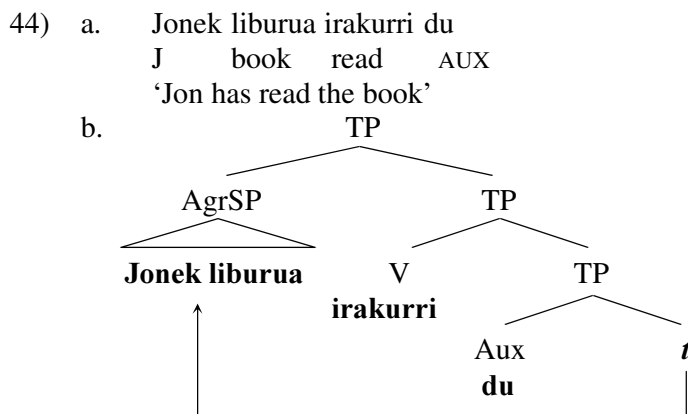
and so they leave a variable in their launching site. If, as is the case, a coindexed pronoun intervenes, a WCO violation ensues. On the other hand, in (41b), the fronted element *Jonek* is a regular DP. Unlike the *wh*- word in (41a) and the quantifier in (41c), it has no inherent quantificational properties²⁷. Moreover, its fronting is motivated for prosodic reasons. There is no reason to suppose that focus fronting in (41b) leaves a variable, as opposed to a regular trace. As a consequence, this example does not meet the conditions in (42), and it is judged grammatical.

In this section, it has been argued that several properties of Basque focus and *wh*- constructions follow from the reformulation of the NSR in (30). In the next section, the attention turns to sentences without foci or *wh*- words.

3.5 Derivations, part II: restricted remnant movement

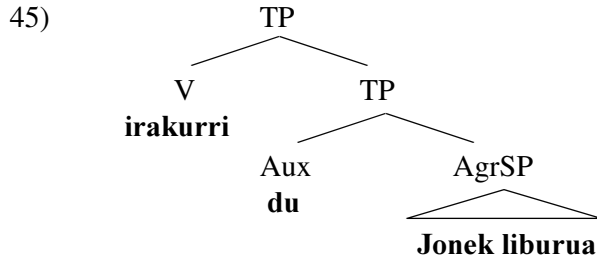
3.5.1 Affirmative clauses

Let us start by deriving a simple affirmative sentence. Recall that, in section 3.2, such sentences were argued to have the structure in (44b), involving remnant movement of AgrSP:



I argue that the movement step in (44b) also has (30) as its driving force. However, the motivation is somewhat different from the focus/*wh*- cases that were examined in the previous section. The starting point, though, is the same. Consider the representation at the derivational point immediately prior to (44b)

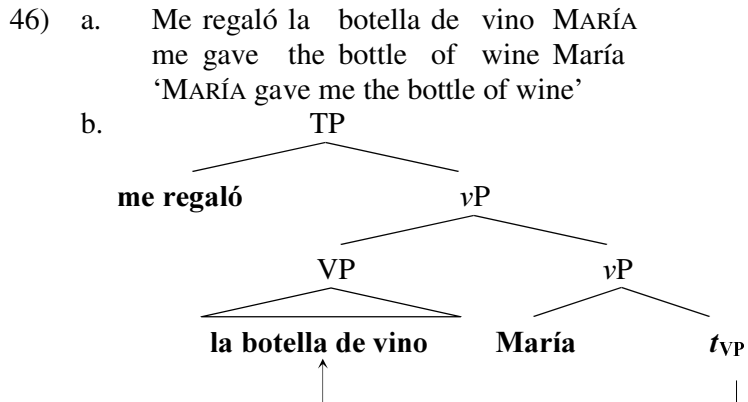
²⁷ See A. Elordieta (2001, ch. 4) for further evidence that focus fronting of regular DPs is not quantificational in Basque (as opposed to, e.g., Hungarian).



This representation raises the same problem noted in the previous section: according to (30), PF marks [V Aux] as the focus of the clause, but LF dictates otherwise. Hence, a clash arises. The difference with the focus/wh- cases is that there is no element in (45) that can be fronted to receive nuclear stress. The sentence contains no foci or wh- words. Therefore, fronting a single element would simply recreate the mismatch one step higher in the structure: PF would mark the fronted element as the focus, but LF would not recognise it as such.

I would like to claim that (44b) is the strategy that Basque makes use of in order to resolve the LF-PF mismatch in these cases. The intuition is that something must be placed in front of [V Aux] to prevent stress from falling on it. If no inherently stressable element is present (e.g., foci or wh- words), (44b) applies as a last resort strategy to remove nuclear stress from [V Aux].

This operation is reminiscent, I think, of Zubizarreta's (1998, ch. 3) discussion of prosodically motivated movement in Romance. She argues that the VOS order in (46a) is derived from a base VSO, by remnant movement of VP across the subject (46b)²⁸. She argues that this movement takes place so that the subject ends up as the most embedded element, and can be assigned main stress without resorting to her Emphatic/Contrastive Stress Rule:



Had this movement operation not taken place, the object *la botella de vino* 'the bottle of wine', would end up as the most embedded constituent, thus receiving nuclear stress through Cinque's (1993) algorithm. This would be in conflict with LF, which interprets

²⁸ She discards a base SVO order with movement of [VO] on the grounds that it would involve T' movement. This objection makes sense only to the extent that one wishes to assume X-bar invisibility. If we adopt a Bare Phrase Structure-like model (as I am doing implicitly here), there would be no problem in moving an intermediate projection.

Maria as the focus of the sentence. Therefore, Zubizarreta argues, (46b) is a strategy to defocalise an element that should not receive stress. In Basque, however, given the way the NSR is formulated in (30), defocalisation can only take place by moving something to the left of [V Aux], as explained above.

This analysis also recalls the one in Costa (1998), who asks why is it that neutral interpretation in European Portuguese is only possible in SVO orders. His answer is that, given his own algorithm of stress placement in this language, SVO orders are the only ones that guarantee a more or less even distribution of stress across the entire clause. Applying this logic to Basque, it can be argued that (44b) results in a neutral interpretation because it allows stress to be distributed more evenly through the clause:

The stress pattern in this kind of sentences (as described in section 3.3.1) supports this idea. According to (30), the NSR can operate on the leftmost constituent of the main IntP, which in this case it is the fronted AgrSP. Inside this constituent it operates normally, i.e., it assigns stress to the most embedded element within that constituent, along the lines of Cinque (1993) or some equivalent formulation. Let us go back to the stress placement data in (29):

- 29) a. Jonek LIBURUA irakurri du
 J book read AUX
 b. Jonek Mireni LIBURUA eman dio
 J M_{DAT} book give AUX
 c. JON etorri da
 J come AUX
 d. Jonek liburua AZKAR irakurri du
 J book quickly read AUX
 e. Jonek Mireni liburua AZKAR eman dio
 J M_{DAT} book quickly give AUX
 f. Jon AZKAR etorri da
 J quickly come AUX

In (29a), the object *liburua* ‘book’ is the most embedded constituent within the fronted AgrSP, hence it receives nuclear stress. The same goes in (29b). In (29c), where only the subject is present in AgrSP, it is the subject that gets stressed. In (29d-f), where the adverb *azkar* ‘quickly’ is immediately pre-[V Aux], it is the adverb that receives stress, indicating that it is the most embedded constituent²⁹. Other constituents contained in the fronted AgrSP receive lesser degrees of stress. This last property can be easily subsumed under the algorithm for stress assignment developed by Arregi (2002, chs 3 and 4)

This analysis also predicts that focus spreading is possible in exactly this type of clauses. In (44b), AgrSP hasn’t been fronted because it needs to be focalised. Rather, it has been fronted to prevent [V Aux] from being focalised. Thus, there is no reason why any particular element should be interpreted as the focus of the sentence. The most embedded constituent, by virtue of carrying nuclear stress, can be so interpreted. However, this need not be so, and focus interpretation can spread to any larger constituent containing the element with nuclear stress.

²⁹ Based only on these stress data, A. Elordieta (2001) and Arregi (2002) argue that the [O Adv] order arises by base generation in a Larsonian VP-shell. However, the present author (2004b) argues on independent grounds that it is derived by object movement across the adverb to SpecAgrOP.

Note also that the remnant movement analysis preserves the order of AgrSP internal constituents trivially. Other analyses that made use of leftward movement in order to derive SOV orders (Albizu 1994; Ormazabal *et al* 1994; G. Elordieta 1997)³⁰ assume that each subconstituent undergoes fronting independently of the others. Therefore, they need to assume a very elaborate clause structure, with a very specific hierarchy of projections, in order to ensure that the resulting order is SOV. In the present analysis, though, order preservation comes for free. Especially interesting here is the case of low adverbs, such as *azkar* ‘quickly’. A. Elordieta (2001) claims that the only possible position for these adverbs in neutral clauses is the immediately pre-[V Aux] one (47a). If the adverb appears somewhere else, the sentence cannot be interpreted a neutral anymore. For instance, (47b), where the adverb is post-verbal, can only be interpreted as having narrow focus on the object *liburua* ‘book’, plus topicalisation of the subject. Similarly, (47c) and (47d) can be interpreted in the same way, with further topicalisation of the adverb. This paradigm follows if neutral interpretations arise from moving the entire AgrSP, and everything contained in it. The cases in (47b-d) are then analysed as instances of focalisation and (multiple) topicalisation, along the lines of the previous section:

- 48) a. Jonek liburua azkar irakurri du
 J book quickly read AUX
 ‘Jon has read the book quickly’
 b. Jonek liburua irakurri du azkar
 J book read AUX quickly
 ‘As for Jon, it is the book that he read quickly’
 c. Jonek azkar liburua irakurri du
 J quickly book read AUX
 ‘As for Jon, as for doing something quickly, it is the book that he read so’
 d. Azkar Jonek liburua irakurri du
 quickly J book read AUX
 ‘As for Jon, as for doing something quickly, it is the book that he read so’

A potential problem is raised by complement clauses, which can appear both in pre- and post-verbal position. In the latter case, moreover, they do not seem to be extraposed or right-dislocated at all.

- 48) a. Jonek [_{CP}Mirenek liburua irakurri duela] esan du
 Jon Miren book read AUX.C say AUX
 ‘Jon has said that Miren has read the book’
 b. Jonek esandu [_{CP}Mirenek liburua irakurri duela]
 Jon say AUX Miren book read AUX.C
 ‘Jon has said that Miren has read the book’

Both examples in (48) are semantically and pragmatically equivalent, and as Ortiz de Urbina (2003:452ff) argues, the choice between one and the other seems to be based on heaviness –i.e., the tendency of heavy constituents to appear at the end of the clause. For these sentences, I adopt an analysis along the lines of Stjepanovic (1999) and

³⁰ Note also the exception of Haddican (2001), who also uses remnant movement, although in a quite different way.

Bobaljik (2002): I assume that there are two copies of the embedded clause: the one in the base position and the one created by AgrSP movement. In the normal course of events, it is the upper copy that would be pronounced. However, in the case of heavy constituents, processing factors allow spell out of the lower copy instead. Therefore, the examples in (48a-b) can be analysed and in (49a-b), respectively:

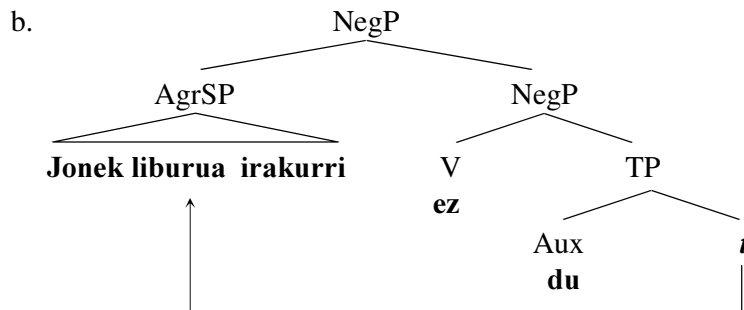
- 49) a. [Jonek [CP Mirenek]] esan du [~~Jonek [CP Mirenek]]~~
 b. [~~Jonek [CP Mirenek]]~~ esan du [Jonek [CP Mirenek]]

Also, as Ortiz de Urbina points out, “discourse considerations may override heaviness, so that those clause types whose discourse function is typically thematic tend to appear as topics in the left periphery of the clause”. This seems to suggest that, in effect, (49b) is a case of pronunciation of a low copy allowed by processing factors, and not blocked by any other grammatical requirement³¹.

3.5.2 Negative clauses

The previous sub-section argued that the condition in (30) can account for the order of neutral affirmative clauses in Basque, as well as for the stress patterns and interpretation these sentences display. Let us turn now to negative clauses. For this type of clauses, AgrSP fronting must be blocked. Otherwise ungrammatical orders like (50) would arise:

- 50) a. * Jonek liburua irakurri ez du
 J book read no AUX
 ‘Jon hasn’t read the book’



In affirmative clauses, AgrSP fronting takes place in order to prevent [V Aux] from receiving nuclear stress, thus resolving a clash between PF and LF. The logical outcome of this line of thinking is that, in negative sentences, negation can carry the nuclear stress of the sentence, and therefore be interpreted as the focus of the clause. This is precisely what I want to claim. Recall from section 3.3.1 that negation carries nuclear stress, unless there is a focus or a wh- word, in which case it is the latter that receives nuclear stress. The relevant data are repeated below:

³¹ Another possibility is to assume that post-verbal complement clauses have been extraposed, in the spirit of Müller’s (1998) analysis of German.

- 28) Jonek EZ du liburua irakurri
 J no AUX book read
- 29) c. ZER ez du Jonek irakurri?
 what no AUX J read
 d. LIBURUA ez du Jonek irakurri
 book no AUX J read

I propose that negation has the property that it can receive the nuclear stress of the sentence in case there is no focus/wh- word that requires it³². In such cases, the focus/wh- word moves to the left of negation and receives stress in the manner discussed in the previous sections.

This is not the entire story, though. With what has been said so far, the prediction is that, in negative clauses, [Neg Aux] should appear at the beginning of the sentence. Remember, however, that in section 2.1, negative clauses were described as having the order [S Neg Aux O V], repeated in (51a). That is, the subject needs to move to the left of negation, otherwise, the order in (51b) would obtain.

- 52) a. Jonek ez du liburua irakurri
 J no AUX book read
 ‘Jon hasn’t read the book’
 b. Ez du Jonek liburua irakurri
 no AUX J book read

There are various things to note at this point. First of all (51b) is a grammatical sentence, although less preferred than (51a). In other words, moving the subject to the left of negation is preferred but by no means obligatory³³. Moreover, the pre-negation subject does not receive nuclear stress (unless, of course, it is to be interpreted as the focus of the sentence). These factors suggest that subject fronting is not prosodically driven, unlike the examples discussed so far in this article. Ortiz de Urbina (2001) and Etxepare (2003) both suggest that the pre-negation subject in (51a) is actually a topic, and the preference for it to appear in pre-negation position is linked to the status of subjects as the default sentence topics. Although this seems a reasonable analysis, more research is clearly needed. I will leave this task for the future, though³⁴.

3.6 An alternative?

I have argued in the previous pages that word order variation in Basque is driven by prosodic factors, as a mechanism to repair mismatches between prosody and discourse information. However, the analysis is admittedly inelegant in that it relies on the quite

³² This property is already mentioned by Hualde *et al* (1994) and Ortiz de Urbina (2001).

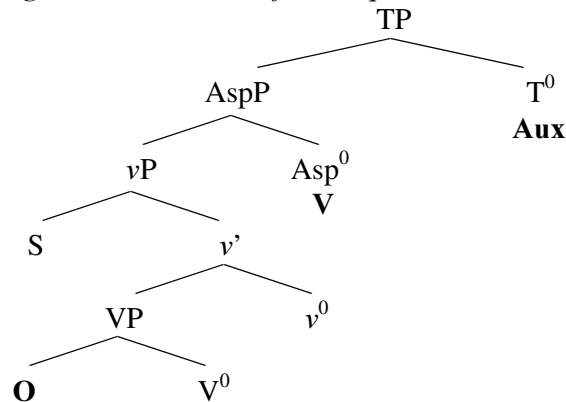
³³ In Laka (1990), where a large number of negative sentences are included, nearly all of them have the subject following negation. It is Artiagoitia (1992) who points out that pre-negation subjects are usually preferred.

³⁴ For instance, if the subject in (52a) is really a topic, one would expect it to show other topic properties, such as, e.g., the impossibility of being a non-specific indefinite, or an negative polarity item. At present, though, I have no such data available.

baroque definition of the domain for stress assignment in (30). Is it possible keep the same results with a simple version of the stress assignment algorithm? I believe that, unfortunately, the answer is “no”.

Arregi (2001, 2002) tries to achieve precisely this goal. The same way as I do, he argues that Basque word order variation is prosodically driven. However, unlike me, he assumes a maximally simple version of the NSR, whereby stress is assigned to the most embedded constituent, without any restrictions of the kind in (30). He assumes the structure in (52), with the auxiliary being base generated in T^0 , the verb moving by head movement up to Asp^0 , and both subject and object staying in their VP/ v P internal positions:

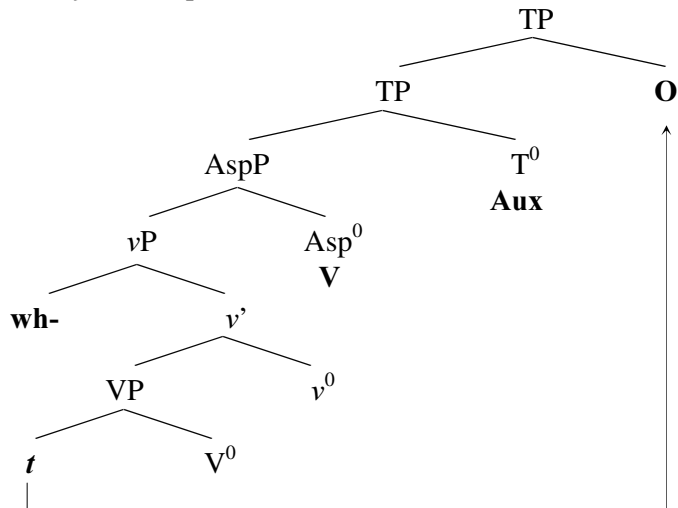
52) *Arregi's clause structure for Basque*



Arregi argues that, in order for wh- words and foci to receive main stress, they must appear as the most embedded constituents in the clause. The way in which he implements it is by moving all lower constituents to a higher position until there is no phonetically realised element in a more embedded position. For instance, if the subject were a wh- word, the object would have to move up³⁵:

³⁵Arregi allows both rightward and leftward movement. Notice, though, that only purpose of the movement is to remove the object from below the subject, which can be achieved by simply adjoining it to v P or AspP. If this moves proceeds rightwards, we would end up with an ungrammatical order in which the object would intervene either between the wh- word and [V Aux], or between the verb and the auxiliary. In order to prevent this result, Arregi is forced to stipulate that rightward (but not leftward!) movement can only target TP. Moreover, nothing in his analysis seems to derive the fact that leftward movement should result in a topic interpretation and intonation, whereas rightward movement should not.

53) *A subject wh- question*



It is rather obvious this analysis treats Basque as a *wh-* in situ language. The problem is that Basque *wh-* words do not behave at all as though they were in situ. For one, they can license parasitic gaps (data from A. Elordieta 2001:70):

- 54) a. ✓ Nor agurtu zenuen *t* [*pg* ezagutu gabe]?
 who greet AUX know without
 ‘Who did you greet without knowing?’
 b. ✓ Nori eman diozu muxu bat *t* [*pg* ezagutu eta gero]?
 who give AUX kiss one meet and after
 ‘Who did you kiss after meeting?’

In order to show that these sentences involve parasitic gaps, and not *pro* objects, consider (55a), in which the gap is embedded inside an island. As expected, ungrammaticality results. On the other hand, in (55b), where there is no *wh-* involved in the matrix clause, we can use a *pro* object in the embedded clause, which does not give raise to an island violation:

- 55) a. * Nori idatzi zenion *t* [[*pg* gomendatu zizun] gizonarekin hitzegin ondoren?]
 who write AUX recommend AUX.C man speak
 after
 ‘Who did you write to after talking to the man who recommended?’
 b. ✓ Joni idatzi nion *t* [[*pro* gomendatu zidan] gizonarekin hitzegin ondoren]
 J write AUX recommend AUX.C man speak after
 ‘I wrote to Jon after talking to the man who recommended him’

Basque *wh-* words can also undergo long distance movement through an indefinite number of clauses, as long as the familiar constraints on this kind of movement are observed. This kind of sentences are impossible to analyse as involving no *wh-* movement. In fact, even Arregi has to acknowledge some overt *wh-* movement here:

- 56) ✓ Zer uste duzu [Jonek esan duela [Mirenek entzun duela [Ainarak erosi
 what think AUX J say AUX.C Miren hear AUX.C Mikel buy
 duela?
 AUX.C
 ‘What do you think that Jon has said that Miren has heard that Mikel has
 bought?’

Thus, we see that, contrary to what Arregi proposes, Basque wh- words cannot be analysed as being in situ. Rather, they need to move overtly, which in turn forces us to adopt a stress assignment algorithm along the lines of (30), instead of the simpler version Arregi puts forward³⁶.

3.7 Conclusion

In this section, I have developed a theory of word order variation in Basque that relies crucially on a restriction of the domain in which the NSR may apply (30). Once this restriction comes into play, the different word orders arise as a function of the need for certain elements to (not) appear in stressed positions. Moreover, several associated properties of different word orders (and especially in the domain of focus and wh-fronting) follow from this analysis.

This approach also reverses a long-standing assumption in Basque syntax, namely, that affirmative clauses represent the “base form” of the sentence, negative clauses and V2 clauses being derived from them. However, this was essentially a non-written assumption that, nobody had ever bothered to (dis)prove –with the notable exception of Haddican (2004), who reaches the same conclusion as me.

The theory developed here has also a number of implications for the wider theory of the phonology-syntax interface, which I explore briefly in the following pages.

4. Outlook

4.1 The syntax-phonology connection revisited.

The key ingredient of the analysis of Basque was the restriction on the domain of application of the NSR, formulated in (30) and repeated here.

30) *The NSR in Basque*

In Basque, the Nuclear Stress Rule can only operate within the constituent merged at the leftmost edge of the main intonational phrase (IntP henceforth).

The adoption of this requirement entails that the interface between syntax and prosody features more mechanisms than the NSR, and that some of them are language-specific. In fact, the NSR might be thought of as the default means of connecting prosody and syntax, and languages differ on which amendments to it they adopt. I have argued that

³⁶ Nonetheless, I believe that Arregi’s algorithm captures the distribution of intermediate stress in quite a neat way. In principle, I think that his ideas can be incorporated into my version of the NSR, thus producing a more accurate account of the prosodic prominence of different constituents.

Basque resorts to (30). Other languages might resort to stress shift, or a more refined version of the NSR including selectional information (Zubizarreta 1998), or to align main stress with a particular prosodic boundary, in terms of linear order alone (Selkirk 1996), instead of in terms of merger as I have done here.

One thing to keep in mind is that these mechanisms do not necessarily suppose a complication in the grammar. The fact that they seem to be language-specific entails that they are learnt. As is well known, children are sensitive to the prosodic structure of the language well before they start producing speech. Therefore, there should not be much difficulty to incorporate these language specific prosodic patterns into the theory of grammar, as long as they can be defined in terms of independently available notions, such as prosodic boundaries, syntactic constituents, c-command, merger, and so on.

If this reasoning is correct, it might imply in turn that syntax is constrained by prosody to a larger extent than is usually thought (f.i., Truckenbrodt 1995 argues that extraposition from NP is constrained by the prosodic status of both the extraposed constituent and its environment³⁷). It also entails, as has been defended in this paper, that PF, LF, and narrow syntax are much more closely interconnected than the Y model implies.

4.2 Focus and cross-linguistic variation in functional projections

Another thesis defended in this paper is that Basque focus, *wh*-, and topic fronting can be modelled without resorting to an articulate Rizian left periphery. This, however, need not be the case in all languages. For instance, Aboh (2003) reports that the West African Gbe family encodes focus and topic information through the particles *we* and *ya* respectively. Foci and topics appear left dislocated and adjacent to these particles, which leads Aboh to analyse them as the heads of FocP and TopP. Foci and topics enter into a spec-head relation with their respective particles. Gbe is, I believe, a language family for which the postulation of focus and topic phrases is more than well motivated.

Such languages suggest, then, that the analysis I have proposed for Basque is not universal. In fact, there is a long line of research that argues that functional categories are not universal, and that children have to deduce which ones are present in their language on the basis of the positive evidence they receive (e.g., Iatridou 1990, Thrainsson 1996, Bobaljik & Thrainsson 1998, Bury 2003, Fukui & Sakai 2003, Zeijlstra 2004). Therefore, while Basque has to resort to the interplay of PF and LF –via syntactic movements- to express the topic/focus articulation of the clause, other languages may have specific syntactic slots for this function. Obviously, this opens up the debate of what are the possibilities for cross-linguistic variation, and what are the special properties attached to each option. I find this a fascinating question, and I expect to return to it in future research.

³⁷ Specifically, his proposal is that if the extraposed constituent is of prosodic category *x*, it must end up in a position adjacent to another prosodic category *x*.

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