

## Chapter 4

# The Nuclear Stress Rule in Ondarroa Basque

### 4.1 Introduction

In this chapter, I argue that the NSR that was proposed in §3 makes correct predictions in Ondarroa Basque. §4.2 introduces certain important aspects of clause structure in Basque that will be important in implementing the NSR in this language. In §4.3–4.6, I show that the NSR accounts for the basic facts of sentence stress in Ondarroa Basque, and discuss how movement can affect what constituent in the sentence receives primary stress. Thus, the facts presented in this chapter provide further support for the version of the NSR proposed in §3.

The version of the NSR defended in this thesis is structure-sensitive, and predicts that different syntactic structures result in different stress patterns. However, as was shown in §2, there are certain phrases whose structure does not in any way determine the placement of stress in them. On the other hand, this chapter also argues that, in certain domains, stress placement *is* structure-sensitive, as predicted by the NSR. In §4.7 I propose that, although the NSR is universal, there is parametric variation in the domains in which it applies. Thus, I argue that in English, the NSR applies at all levels above the word, but that in Ondarroa Basque (and other Basque dialects) it does not apply inside DPs and the verbal complex. In §4.8, I show that the fact that the NSR in this language does not apply in DPs has the consequence that many sentences can be described in terms of Cinque’s generalization that sentence stress is on the most deeply embedded constituent. In this section, I provide data for which this generalization does not hold, thus lending further support for the version of the

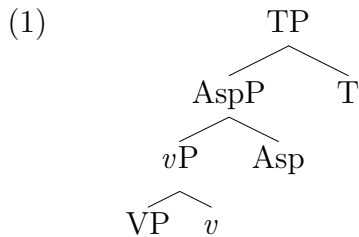
NSR proposed in §3.

## 4.2 Basic Clause Structure

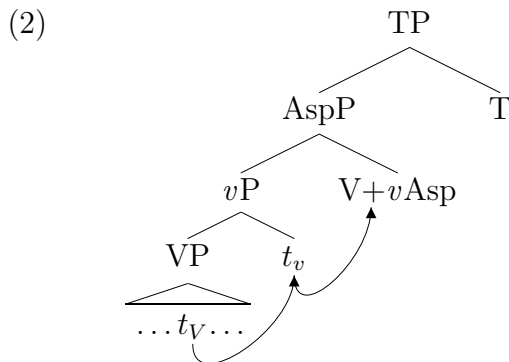
In this section, I present some basic facts about the structure of sentences in Basque, concentrating on the aspects of the structure which will be relevant for the analysis of sentence stress to be developed in later sections. In §4.2.1, I discuss the syntax of verbs and tense, and in §4.2.2, I present the basic facts about word order and the distribution of arguments.

### 4.2.1 The Syntax of Verbs

Following Laka 1990 and Arregi 2000, I assume that sentences in Basque have the following basic structure:



All sentences contain a *v* head whose complement is VP. The external argument, when present, is generated in the specifier position of this head (see Hale and Keyser 1993, Kratzer 1996, Chomsky 1995, 2000, Marantz 1997). Basque sentences also contain an Asp head, which encodes perfective or imperfective aspect. In the syntax, V moves to *v*, and the V+*v* complex moves to Asp:



In most cases, the  $V+v+Asp$  complex stays in *Asp*, and an auxiliary *V* is adjoined to *T* in order to satisfy the requirement that *T* must be affixed to a verb (see Laka 1990 and Arregi 2000 for details). These operations result in a compound verb containing two verbal words: the *participle* (i.e.  $V+v+Asp$ ) and the *auxiliary* ( $Aux+T$ ).<sup>1</sup> The following are some examples of compound tenses:<sup>2</sup>

(3) *Present Tense:*

- a. Jonek liburo asko irakur+ten dau.  
Jon.E book many.A read+IMP Aux.PR  
*Jon reads many books.*
- b. Aitorrek Bilboa ju+n de.  
Aitor.A Bilbao.IN go+PRF Aux.PR  
*Aitor has gone to Bilbao.*

(4) *Past Tense:*

- a. Jonek liburo asko irakur+te ban.  
Jon.E book many.A read+IMP Aux.PST  
*Jon used to read many books.*
- b. Aitorrek Bilboa ju+n san.  
Aitor.A Bilbao.IN go+PRF Aux.PST  
*Jon went to Bilbao.*

There are a small number of verbs which, beside the tenses described above, also have simple tenses. The list of verbs which can appear in simple tenses varies from dialect to dialect. In Ondarroa Basque, these verbs are *ixan* and *eon* ‘be’<sup>3</sup>, *euki*

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<sup>1</sup>The tensed verb is also inflected for agreement with the ergative, absolutive and dative arguments (if present) in the clause. The form of the auxiliary depends on the presence versus absence of ergative agreement in the tensed verb. In the former case, the auxiliary is the root of *edun* ‘have’, and in the latter case, the root of *ixan* ‘be’. Although these details have been ignored for ease of exposition, they do not involve significant changes to the analysis proposed. See Arregi 1999, 2001a and references cited there, for details and discussion of Basque verbal morphology.

<sup>2</sup>These are only a subset of all the possible compound tenses in Basque. There are two future tenses, which are built with a future participle and a present or past auxiliary. There are also so called ‘conditional’ and ‘potential’ tenses, which are constructed with certain modal heads that are adjoined to *T*. Finally, there is also an imperative tense, and, in other dialects, there are also two subjunctive tenses (present and past). All these involve functional projections which have not been included in (1) above. Their syntax, however, is basically the same as the tenses described in the text.

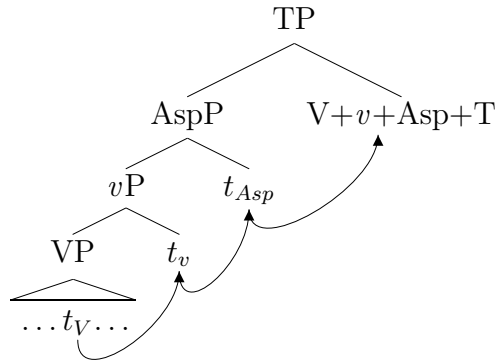
<sup>3</sup>The difference between *ixan* and *eon* is the same as that between Spanish *ser* and *estar*. Roughly, *ixan* is used with individual level predicates, and *eon* with stage level predicates.

‘(possessive) have’, *jun* ‘go’, *etorri* ‘come’, *ibilli* ‘walk, go’, *erun* ‘take, carry’, *jakin* ‘know’. Simple tenses are characterized by a single verbal word which is inflected for (present or past) tense<sup>4</sup>, and in which there is no overt aspectual morphology:

- (5) a. Jonek gausa asko raki.  
 Jon.E thing many.A knows  
*Jon knows many things.*
- b. Miren Bilboa ixun.  
 Miren.A Bilbao.ALL go.PST  
*Miren was going to Bilbao.*

These tenses are formed by movement of the  $V+v+Asp$  complex to T. Since this satisfies the requirements of T, no auxiliary is necessary:<sup>5</sup>

(6) *Simple Tenses:*



To sum up so far, Basque has two basic types of tenses: simple tenses, in which Asp moves to T, and compound tenses, in which there is no movement to T. I have

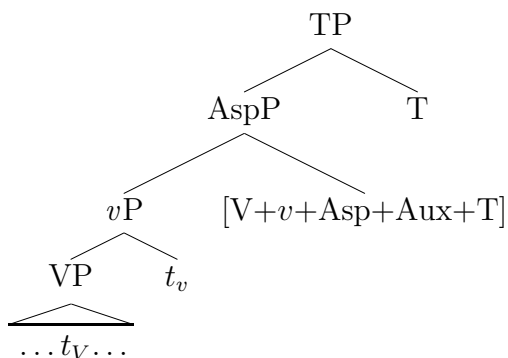
<sup>4</sup>In fact, the verbs *etorri*, *ibilli* and *erun* only have simple present forms in Ondarroa Basque. Quite generally, simple tense paradigms are quite poor compared to compound tense paradigms. For instance, transitive auxiliaries in compound tenses can be inflected for any person in the absolutive (with certain well-known restrictions, such as the *me-lui* constraint), but in simple tenses, only third person is possible. For instance, while there is a simple tense form for *I have him* (‘dakat’), there is no simple tense form for ‘I have you’. Whenever there is no simple form available, the corresponding compound form is used. These facts vary greatly from dialect to dialect.

<sup>5</sup>As I argue in Arregi 2000, Asp in simple tenses is imperfective and non-habitual. Although this is not crucial for our purposes in this thesis, it is important to bear in mind that only a few verbs can appear in simple tenses, i.e. movement from Asp to T is only licensed in very restrictive contexts: (i) it is only possible with certain verbs, and (ii) it is only possible with a particular choice of Asp. For most verbs, imperfective non-habitual aspect results in an imperfective compound tense. See Arregi 2000 for details.

presented an analysis in which, following Laka 1990 and Arregi 2000, the morphological difference between simple and compound tenses is described in syntactic terms: presence versus absence of movement of the verb to T. There is, however, an alternative analysis in which *all* tenses involve movement to T. This analysis was first proposed by Ortiz de Urbina (1989) (see also Ortiz de Urbina 1995), and is further defended in G. Elordieta 1997b and A. Elordieta 2001. These authors provide several arguments in favor of this analysis, and these are discussed in §4.6.2 below. As I show there, most of these arguments show that the participle and the auxiliary form a single phonological word. However, analyzing these facts in terms of syntactic movement of the verb to T in compound tenses does not account for the fact that the participle and auxiliary form separate words morphologically. All the facts are compatible, however, with an analysis, such as the one defended here, in which the participle and auxiliary are separate words in the syntax, but which are joined into a single word at PF. This can be achieved with the operation *Morphological Merger* (see Marantz 1988, Halle and Marantz 1993, Bobaljik 1996, Embick and Noyer 2001). In the morphological component, merger joins two separate adjacent heads and forms a single complex head. In the case of Basque compound tenses, it can be represented as follows:

(7) *Merger of participle and auxiliary*

$$[V+v+Asp] [Aux+T] \rightarrow [V+v+Asp+Aux+T]$$



Following the references cited above, I take morphological merger to be a lowering operation (as opposed to syntactic head movement, which is raising). As shown in (7), merger applies after the auxiliary has been adjoined to T. Thus, the present

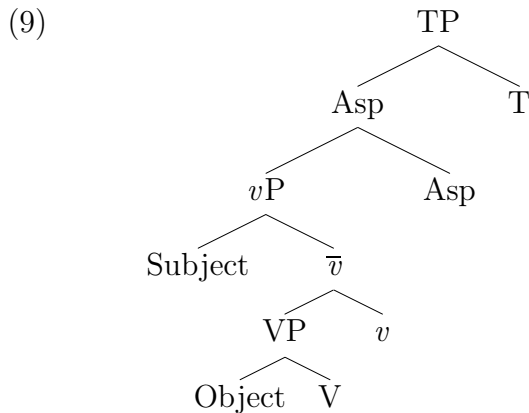
analysis captures all the relevant facts: the participle and auxiliary are morphologically separate words due to the absence of movement of the verb to T, and they are phonologically a single word due to merger applying late at PF.

#### 4.2.2 The Syntax of Arguments

In Basque transitive sentences, the ‘neutral’ word order is SOV.<sup>6</sup>

- (8) a. Mirenek Jon ikusi rau.  
 Miren.E Jon.A see.PRF Aux.PR  
*Miren has seen Jon.*
- b. Jonek liburo bat idatziko rau.  
 Jon.E book a.A write.FUT Aux.PR  
*Jon will write a book.*

I assume that the object is generated inside the VP, and the subject in the specifier position of  $v$ . Given the basic clausal structure presented in the previous section, transitive clauses have the following structure, abstracting away from movements:<sup>7</sup>



In ditransitive sentences, the indirect object is between the subject and the object:

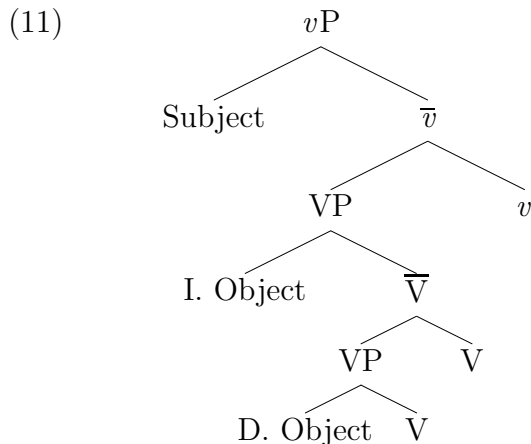
- (10) a. Nik Mirenei kotxe bat emon netzan.  
 I.E Miren.D car a.A give.PRF Aux.PST  
*I gave Miren a car.*

<sup>6</sup>Given that word order is quite free in Basque, the notion ‘neutral word order’ is crucial. For present purposes, sentences with neutral word order are understood as those which can be uttered ‘out of the blue’, without a previous linguistic context. See §5.7 for discussion.

<sup>7</sup>I discuss the possibility of movement of the subject to [Spec, TP] in §4.5.1.

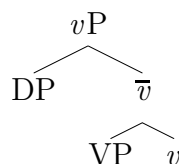
- b. Mirenek Jonei beran etxi erakutzi tza.  
 Miren.E Jon.D her house.A.SG show.PRF Aux.PR  
*Miren has shown Jon her house.*

I assume that ditransitive sentences have a VP-shell structure (cf. Larson 1988), where the direct object is generated as the complement of the lower V, and the indirect object is in the specifier position of the higher V:<sup>8</sup>



As can be seen in all the examples given so far, transitive subjects are inflected for ergative case, direct objects are absolutive, and indirect objects are dative. Furthermore, the tensed verb agrees with all three types of arguments. In intransitive clauses, the case on the subject depends on what type of argument it is. In unergative sentences, where the subject is an external argument (i.e. generated in [Spec, *v*P]), the subject is ergative (cf. 12). In unaccusative sentences, where the subject is an internal argument (generated as the complement of VP), the subject is absolutive (cf. 13).<sup>9</sup>

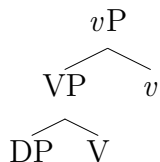
- (12) *Unergative verbs*



<sup>8</sup>The only crucial part of this structure is that the indirect object is higher than and to the left of the direct object. There are alternative analyses that can account for the same facts. See, among others, Marantz 1993, Pesetsky 1994 and Pylkkänen 2002.

<sup>9</sup>There are some exceptions to this generalization. For instance, the subject of *urten* 'leave' is ergative, even though this verb is, in principle, unaccusative.

- a. Jonek jan        dau.  
 Jon.E eat.PRF Aux.PR  
*Jon has eaten.*
- b. Mirenek jolastu    ban        atzo.  
 Miren.E play.PRF Aux.PR yesterday  
*Miren played yesterday.*

(13) *Unaccusative verbs*

- a. Miren    aia        ra.  
 Miren.A arrive.PRF Aux.PR  
*Miren has arrived.*
- b. Arboli    jausi        san.  
 tree.A.SG fall.PRF Aux.PR  
*The tree fell.*

Even though some unergative verbs are intransitive (cf. 12), in that there is only one overt argument in the clause, most unergative verbs are formed with the verb *ein* ‘do’ and some noun which is realized as a direct object and is thus inflected as absolutive. Sentences containing them are transparently transitive:

- (14) a. Mirenek an    fabrikan        biarra    etxen    dau.  
 Miren.E there factory.ALL.SG work.A.SG do.IMP Aux.PR  
*Miren works in that factory.*
- b. Jonek farre    eiñ        ddau.  
 Jon.E laugh.A do.PRF Aux.PR  
*Jon has laughed.*

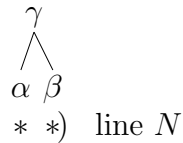
In the following section, I apply the NSR to the structures discussed in this section, and show that it correctly predicts the placement of sentence stress in them.

### 4.3 Sentence Stress

In §3, I proposed the following formulation of the NSR:

(15) *The Nuclear Stress Rule*

- a. Edge-marking: RRR:  $\emptyset \rightarrow ) / * \_ ]$   
 b. In the following configuration:



The grid element corresponding to the head of  $\gamma$  projects to line  $N + 1$  iff the head of  $\gamma$  is branching.

In this version of the NSR, the internal structure of a phrase is crucial to the placement of stress within it. However, in §2 we saw that Ondarroa Basque has phrase level stress rules which are not structure dependent. For instance, the following DPs, which have different internal structures, have the same stress pattern:

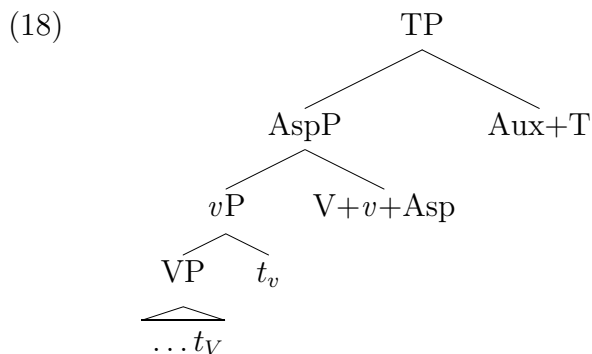
- (16) a. [[ nire aman            ] lagune        ]     ni<sup>re</sup> aman lagu<sup>ne</sup>  
           my mother.G.SG friend.A.SG  
           *my mother's friend*
- b. [ nire [ lagun andixe    ] ]     ni<sup>re</sup> lagun andi<sup>xe</sup>  
           my friend big.A.SG  
           *my great friend*

Thus, it might seem that the NSR does not apply in Ondarroa Basque. In this section, I argue that this is not the case. The data presented below provide evidence that the NSR does apply in Basque, but that certain parts of the syntactic tree are invisible to it. In particular, the internal structure of DP is not accessible to the NSR. Inside DP, prominence is determined by the stress rules proposed in §2. In other words, DPs are treated as ‘minimal units’ for the purposes of the NSR. Accordingly, in all the examples examined below, all DPs are considered as if they were words for the purposes of the NSR. The question of parametric variation, (i.e. the exact difference between English and Basque in terms of the domains in which the NSR applies) is dealt with in §4.7.

The placement of sentence stress in Ondarroa Basque (and all other pitch accent dialects) follows this generalization:<sup>10,11</sup>

- (17) Sentence stress is on the rightmost constituent to the left of the verb.

Given the head-final nature of Basque syntax, it is easy to see how the NSR can account for this generalization. Given the basic clause structure adopted in the previous section,



the NSR predicts that some constituent inside *vP*, if present, bears sentence stress. First, specifiers of *Asp* and *T* cannot bear sentence stress, since the NSR states that a specifier (the sister of a branching head) is less prominent than its sister. Furthermore, the participle and auxiliary do not bear sentence stress, since the NSR gives more prominence to their sister (i.e. a complement is more prominent than the head it is a complement to). By the same reasoning, if there is more than one constituent inside *vP*, the rightmost one is the one bearing sentence stress, since it is contained in *VP*, the complement of *v*. Thus, the NSR derives generalization (17). In the rest of this section, I illustrate this generalization with the major sentence types presented in the previous section, and show in more detail how the NSR derives the relevant facts.

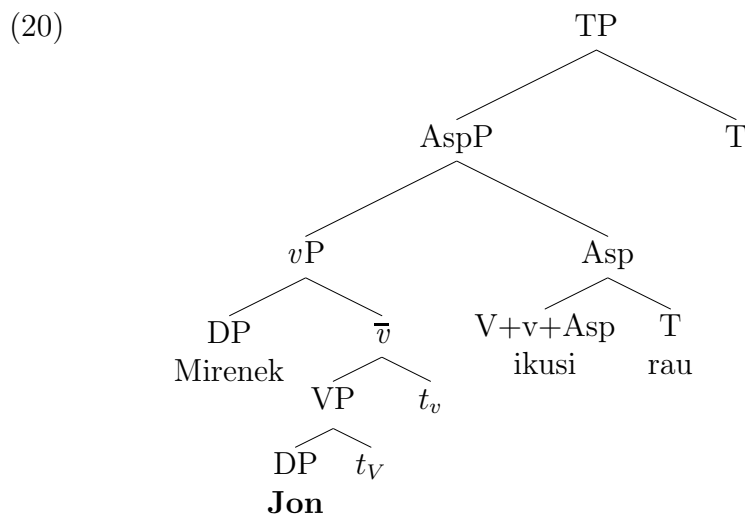
<sup>10</sup>This generalization is somewhat imprecise, since it is not clear what is meant by ‘the verb’, and it has nothing to say about sentences in which there is no constituent to the left of the verb. Needless to say, I only take this to be a rough generalization. As I argue in this chapter, what accounts for the placement of sentence stress is the NSR.

<sup>11</sup>This section and the following ones contain fairly detailed description of all the relevant facts. A good source which contains a fair amount of descriptive detail is Hualde, Elordieta, and Elordieta 1994 (§§2.8, 4.1). Although this work is a grammar of the variety spoken in the neighboring town of Lekeitio, most of the relevant facts are the same, *modulo* differences in the stress rules discussed in §2 in this thesis.

In transitive clauses, with a neutral SOV order, sentence stress is on the object:<sup>12</sup>

- (19) a. Mirenek **Jón** ikusi rau.  
 Miren.E Jon.A see.PRF Aux.PR  
*Miren has seen Jon.*
- b. Jonek **libúro bat** idatziko rau.  
 Jon.E book a.A write.FUT Aux.PR  
*Jon will write a book.*

Consider (19a) in more detail:<sup>13</sup>



In the  $\bar{v}$  cycle, the following grid is derived:<sup>14</sup>

- (21)
- |             |        |
|-------------|--------|
| *           | line 4 |
| -*)         | line 3 |
| -*)         | line 2 |
| [[Jon t] t] |        |

Since the object *Jon* is the only constituent inside  $\bar{v}$ , it receives highest prominence in this constituent. On the next cycle,  $vP$ , there are two overt constituents (*Mirenek*

<sup>12</sup>In all the examples below, bold face is used to mark the constituent with sentence stress. Furthermore, where relevant, and acute accent mark (´) is placed on the specific vowel that bears sentence stress.

<sup>13</sup>Recall from the discussion in §4.2.1 the participle and the auxiliary form a single word due to morphological merger (see §4.6.2 below for more discussion on this rule).

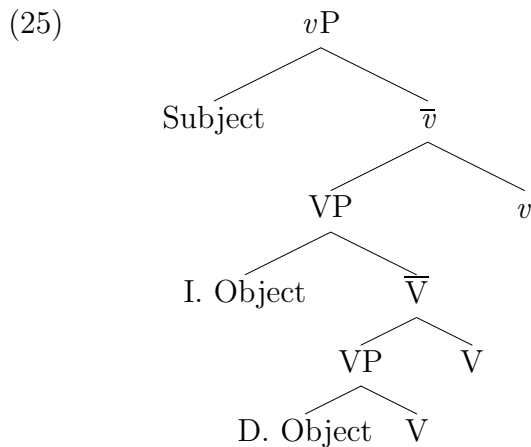
<sup>14</sup>In the grids illustrating the NSR in Basque, the lowest line used is line 2. As shown in §2, this is the highest line that stress projects to at the phrase level in Basque.



In ditransitive sentences, whose neutral order is S-IO-DO-V, sentence stress is also on the direct object:

- (24) Nik Mirenei **kótxe bat** emon netzan.  
 I.E Miren.D car a.A give.PRF Aux.PST  
*I gave Miren a car.*

As shown in the previous section, ditransitive clauses have the following structure (Asp and T have been omitted):

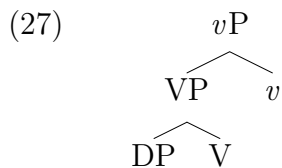


As predicted by the NSR, the direct object is the most prominent constituent in  $vP$ , since it is the complement of the complement of the complement of  $v$ . As in transitive clauses, this makes the direct object the constituent with sentence stress.

In unaccusative sentences, the only argument of the verb has sentence stress:

- (26) **Míren** aia ra.  
 Miren.A arrive.PRF Aux.PR  
*Miren has arrived.*

The NSR correctly predicts this fact, given the structure assumed in the previous section:<sup>17</sup>



<sup>17</sup>In this structure, the absolutive argument does not move to [Spec, TP]. This might be seen as contradicting Ortiz de Urbina's (1989) arguments that this movement does occur. See footnote 27 on page 139 below for discussion.

Since the internal argument is the only constituent inside the  $vP$ , it receives sentence stress.

As we saw in §4.2.2, most unergative clauses in Basque are transparently transitive:

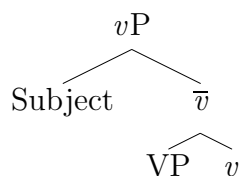
- (28) Mirenek an fabrikan **biárra** etxen dau.  
 Miren.E there factory.ALL.SG work.A.SG do.IMP Aux.PR  
*Miren works in that factory.*

As expected, sentence stress is on the object, as in any other transitive sentence. However, we also saw in §4.2.2 that a reduced number of unergative verbs, such as *jolastu* ‘play’, are not transparently transitive:

- (29) Mirenek **jolastú ban** atzo.  
 Miren.E play.PRF Aux.PR yesterday  
*Miren played yesterday.*

As shown in this example, sentence stress is on the verb (or rather, on the word formed by the participle and the auxiliary). This fact might seem problematic, given the structure assumed for these verbs in §4.2.2:

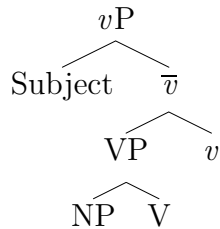
- (30) *Unergative verbs*



Since the subject is in [Spec,  $vP$ ] and both  $V$  and  $v$  move out of  $vP$ , it seems that we wrongly predict that sentence stress should be on the subject.

One might be tempted to solve this problem by assuming that the ergative subject moves to [Spec,TP]. In the resulting structure, the verb would be assigned sentence stress. However, as I argue in §4.5 below, there is evidence that this movement is at best optional in Basque. Thus, this is not a possible solution.

I propose that the solution can be found once we look at the internal structure of unergative verbs in more detail. First, I follow Hale and Keyser 1993 in assuming that *all* unergative verbs are transitive:

(31) *Unergative verbs*

In most cases (cf. 28), the internal argument is realized as an absolutive DP in Basque. The question is how this structure is realized morphologically in cases like (29) where there is no overt object. I would like to propose that this is the result of morphological merger of NP and the verb (along with all the functional heads that are attached to it after head movement and merger of the participle and auxiliary):

(32) *Merger in unergative verbs:*

$$[N] [V+v+\text{Asp}+\text{Aux}+\text{T}] \rightarrow [N+V+v+\text{Asp}+\text{Aux}+\text{T}]$$

As a result of merger, the noun and verb are realized as a single word.<sup>18</sup> Since merger is lowering, the resulting word is assigned more prominence than the subject in [Spec,vP], and thus has sentence stress.

All the examples seen so far contain verbs in compound tenses. The prediction made for sentences with simple tenses are basically the same, but there are certain complicating factors. Simple tense verbs behave as phrasal clitics, as illustrated in the following examples:

- (33) a. Jón da. Jónda  
 Jon.A is  
*It's Jon.*
- b. Jon dator. Jondator  
 Jon.A comes  
*Jon is coming.*
- c. Oixe gixona rátor. Oixegixonarator  
 that.A man.A.SG comes  
*That man is coming.*

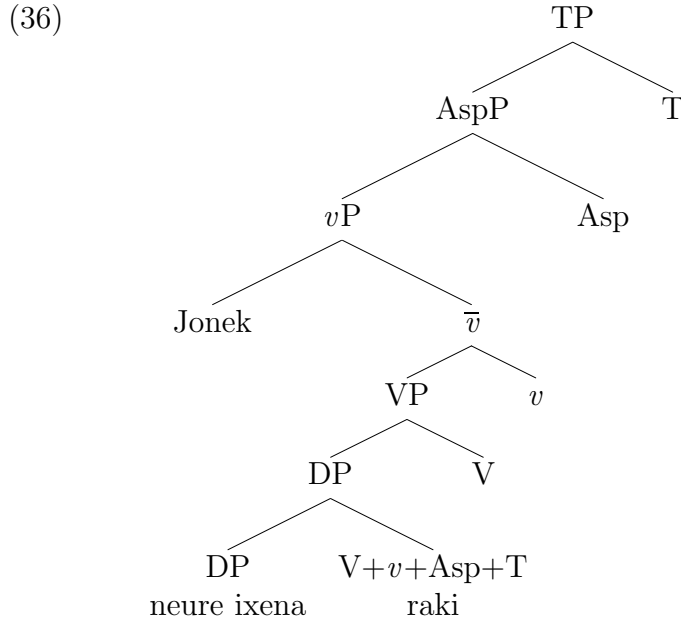
<sup>18</sup>In particular, in this context, V is realized as  $\emptyset$ , rather than *ein* 'do', which is the verb that is used when there is no merger (cf. 28).

- (34) a. Jonek bat tákar. bat takar  
 Jon.E one.A has  
*Jon has one.*
- b. Jonek neure ixena ráki. neure ixena raki  
 Jon.E my name.A.SG knows  
*Jon knows my name.*

In all these examples, the preverbal phrase and the verb form a single phrase with respect to stress, as witnessed by the fact that the string starts with a rise in pitch and ends with a fall (see §2). If they formed separate phrases, we would expect each to have a separate rise and fall. Since the verb and the preverbal phrase do not necessarily form a phrase in the syntax, I propose that this is the result of morphological merger, which adjoins the simple tense verb to the preceding phrase:<sup>19</sup>

- (35) [XP] [V+v+Asp+T] → [<sub>XP</sub> XP V+v+Asp+T]

For instance, in the case of (34b), the resulting structure after merger would be:



<sup>19</sup>This operation is different from the merger operation proposed in §4.2.1 above, which joins the participle and auxiliary in compound tenses into a single word. Apart from accounting for the stress facts discussed above, rule (35) also accounts for the fact that the verb in simple tenses cannot appear first in the clause.

After merger, the object and the tensed verb form a single phrase. This phrase is the complement of V, so the NSR predicts that it has sentence stress. This prediction is confirmed by the data: in all the examples in (33–34), sentence stress is on the phrase formed by the verb and the preverbal constituent.<sup>20</sup>

Thus, the NSR predicts correctly the placement of sentence stress in the major sentence types reviewed in §4.2. In the next section, I discuss the behavior of adverbials with respect to the NSR.

#### 4.4 Adverbials and the NSR

The order of adjuncts in the clause seems to be quite free. As exemplified below with *atzo* ‘yesterday’ and *askotan* ‘often’, they can appear in different positions in the clause:<sup>21</sup>

- (37) a. (Atzo) Jonek (atzo) liburo bat irakurri (\*atzo) ban (atzo).  
 yesterday Jon.E book a.A read.PRF Aux.PST  
*Jon read a book yesterday.*
- b. (Askotan) Mirenek (askotan) liburuk irakurten (\*askotan)  
 Often Miren.E book.A.PL read.IMP  
 dau (askotan).  
 Aux.PR  
*Miren often read books.*

Native speakers seem to have no preference for any one of the possible word orders shown. I assume that these phrases can be base-generated as adjuncts to any of the projections in the basic clause structure (VP, *v*P, AspP, TP). This derives the fact that, despite their freedom in word order, they cannot appear between the object and the verb in neutral sentences.<sup>22</sup> The fact that they cannot appear between the

<sup>20</sup>In the case of the intransitive sentences in (33), this is trivially true, since it is the only phrase present in the structure.

<sup>21</sup>I am including here only the facts about adjuncts that are relevant for the present section. Some of the data below are adapted from A. Elordieta 2001, to which the reader is referred to for further details and discussion.

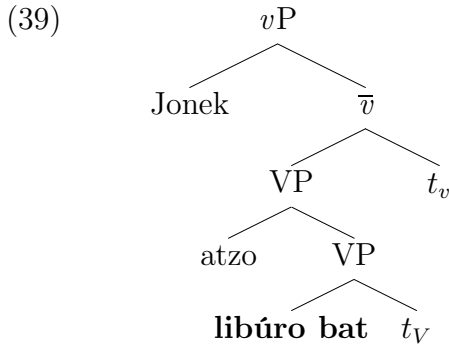
<sup>22</sup>That is, they can appear in this position only in sentences which are not possible ‘out of the blue’. Given the structure assumed here, the only way that they can surface in this position is by movement of the object to the left of them. As will be shown in §4.5, this movement results in sentences which are not neutral.

participle and the auxiliary is a consequence of morphological merger, as argued for in §4.6.2 below.

The behavior of these adverbials with respect to sentence stress is as expected:

- (38) (Atzo) Jonek (atzo) **libúro bat** irakurri ban (atzo).  
 yesterday Jon.E book a.A read.PRF Aux.PST  
*Jon read a book yesterday.*

Since phrases of this type are adjuncts, the NSR predicts that they do not have sentence stress. Consider the case in which *atzo* is between the subject and the object. The structure of *vP* is as follows:

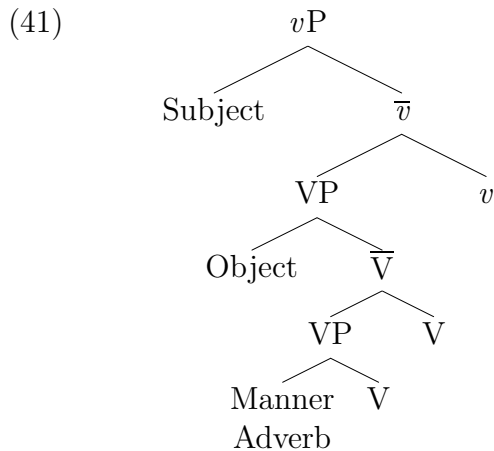


The sister of the adverbial *atzo* is a branching head, and thus the NSR assigns more prominence to it than to the adverbial, resulting in sentence stress on the object. In general, adjuncts to XPs are predicted to have the same status as specifiers, since their sisters are branching heads.

On the other hand, as shown in A. Elordieta 2001, certain ‘short’ manner adverbs, such as *txarto* ‘badly’ and *gogor* ‘hard’ seem to have a fixed position in the clause. In neutral sentences, there is a preference to place them left-adjacent to the verb (the participle in compound tenses):

- (40) a. Jonek atzanengoko asterketi txarto ei ban.  
 Jon.E last exam.A.SG badly do.PRF Aux.PST  
*Jon did the last exam badly.*
- b. Athletic Real Madriden kontra gogor jolasten dau.  
 Athletic Real Madrid.G against hard play.IMP Aux.PR  
*Athletic plays hard against Real Madrid.*

Unlike other adverbs, placing these adverbs in some other position in the clause seems to result in sentences which may not be uttered ‘out of the blue’. I assume, following A. Elordieta 2001, that these adverbs are generated as complements of the lowest verb in a VP-shell structure (cf. Larson 1988):



This accounts for the fact that, in the neutral word order, these adverbs appear between the object (if present) and the verb.

Given their position in the clause, these adverbials typically have sentence stress:

- (42) Jonek atzanengoko asterketi **txárto** ei ban.  
 Jon.E last exam.A.SG badly do.PRF Aux.PST  
*Jon did the last exam badly.*

The manner adverbial is the complement of the complement of the complement of *v*, and thus is the most prominent constituent in *vP*, which means that it has sentence stress.

All the examples we have seen so far involve unmarked word orders. In the following section, I discuss the predictions made by the NSR in sentences with marked word orders, in which one or more constituent has moved from its base position.

## 4.5 The NSR and Movement

In the previous section, all the examples contained some instance of movement: both syntactic head movement and morphological merger. However, none of these movements had a visible effect on the placement of sentence stress, since all the sentences

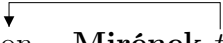
contained some constituent in VP which would end up with sentence stress regardless of the presence or absence of head movement or merger.<sup>23</sup> In this section, I examine two types of movement, left and right dislocation, both of which have a predictable effect on the placement of sentence stress.

The basic idea explored in this section is that, given that the NSR is structure sensitive, any movement has the potential to alter the position of sentence stress. This idea is illustrated in several works which defend some version or other of a structure sensitive NSR (see, among others, Cinque 1993, Zubizarreta 1998, Reinhart 1995, Ishihara 2001 and Neeleman and Reinhart 1998.)<sup>24</sup>

In Basque, there seem to be two main types of movement which alter the unmarked word order discussed in §4.2: left and right dislocation. Although these movements have very specific and distinct syntactic, semantic and discourse properties, in this section I discuss only their effect on the placement of sentence stress. Their effect on other parts of grammar constitutes one of the main topics of chapter 5.

#### 4.5.1 Left Dislocation

Left dislocation is illustrated in the following example, where the object is moved to the left of the subject:<sup>25</sup>

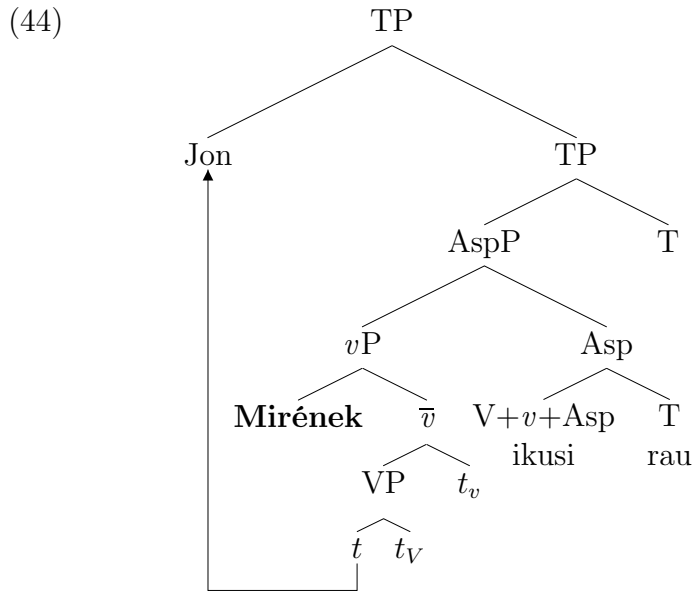
- (43)  Jon **Mirének** *t* ikusi rau.  
 Jon.A Miren.E see.PRF Aux.PR  
*Jon, Miren has seen.*

I assume that left dislocation results in adjunction to TP:

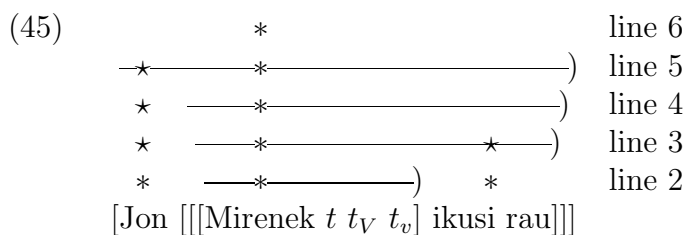
<sup>23</sup>The only exception is merger in simple tenses, which joins the verb and the preverbal DP into a single phrase. The resulting phrase has sentence stress. However, even if merger did not apply, the preverbal phrase would still receive sentence stress.

<sup>24</sup>In fact, this is true of any version of the NSR, including those that are based on word order. However, this is more visible in structure dependent versions of the NSR. For instance, in Halle and Vergnaud's (1987) NSR for English (cf. §3.2), where stress is always rightmost, movement of  $\beta$  to the left of  $\alpha$  in the structure  $[\alpha \beta]$  has an effect on stress, but movement of  $\beta$  to the right does not.

<sup>25</sup>For ease of exposition, the English translations to the examples also have the relevant constituent left dislocated. As shown in §5, left dislocation is very similar to topicalization in English, in that both create topics. Thus, these translations give an idea of the discourse function of the dislocated elements. In some cases (such as 46b below) this might result in English sentences that are far from ideal.



What is crucial in this example is the effect that movement of the object has on the placement of sentence stress. If there is no left dislocation, the NSR assigns sentence stress to the object *Jon* (cf. 19a). However, as shown in (43), after movement of the object, sentence stress is on the subject *Mirenek*. This is precisely what the NSR predicts, since the subject is the only overt constituent left inside *vP*. In the left-dislocated position, the object *Jon* cannot have sentence stress: it is the sister of the branching head TP, which means that TP must contain the constituent with sentence stress (i.e. *Mirenek*). The resulting grid is as follows:<sup>26</sup>



Sentences with OSV order also help in answering the question of movement of the subject to [Spec,TP]. Unlike other clauses seen so far, the hypothesis that the subject does not (obligatorily) raise to [Spec,TP] is crucial in this case. If this movement occurred, the subject would never receive sentence stress, which is contrary to fact.<sup>27</sup>

<sup>26</sup>Note that the NSR does not apply in the VP and  $\bar{v}$  cycles because there is no overt constituent it could apply to.

<sup>27</sup>Ortiz de Urbina (1989) gives some evidence which, he argues, shows that subjects are in [Spec,TP] ([Spec,IP] in his framework). The main objective of his discussion is to argue that Basque

Left dislocation is illustrated further in the following examples:

- (46) a. Kotxe bat nik **Mirénei** *t* emon netzan.  
car a.A I.E Miren.D give.PRF Aux.PST  
*A car, I gave Miren.*
- b. Kotxe bat Mirenei **néuk** *t t* emon netzan.<sup>28</sup>  
car a.A Miren.D I.E give.PRF Aux.PST  
*A car, Miren, I gave.*
- c. Txarto Jonek **atzanengoko asterketí** *t* ei ban.<sup>29</sup>  
badly Jon.E last exam.A.SG do.PRF Aux.PST  
*Badly, Jon did the last exam.*
- d. Amaia **átzo** *t* aia san.  
Amaia.A yesterday arrive.PRF Aux.PST  
*Amaia arrived yesterday.*

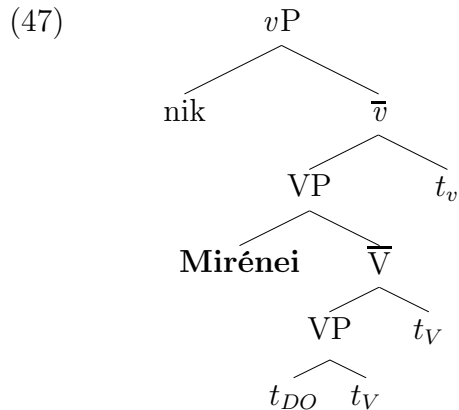
In (46a), the direct object is left dislocated in a ditransitive sentence. The result is sentence stress on the indirect object. The structure of *vP* in the resulting structure is the following:

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sentences do not have a flat structure, by showing that there are several subject/object asymmetries that can easily be explained in structural terms. In particular, he shows that the subject must be structurally higher than the object. For instance, he shows that a subject can bind an object anaphor, but not the other way around. In his framework, where external arguments are not generated inside VP/*vP* (his book is based on his 1986 doctoral dissertation), this means that the subject has to be in [Spec, IP]. Although the arguments are convincing, this is not a necessary conclusion given current assumptions: these subject/object asymmetries can be seen the result of the fact that the subject is generated as the specifier of *vP*, and that the object is inside VP.

<sup>28</sup>As discussed below, in this sentence, the first person singular subject pronoun *neuk* has sentence stress. First and second person pronouns have special forms when contained in the constituent with sentence stress. Thus, in (46a) where it does not have sentence stress, it is realized as *nik*. Something similar occurs with demonstratives. For instance, the distal demonstrative *ori* is realized as *oixe* when it is in the constituent with sentence stress (cf. 33c).

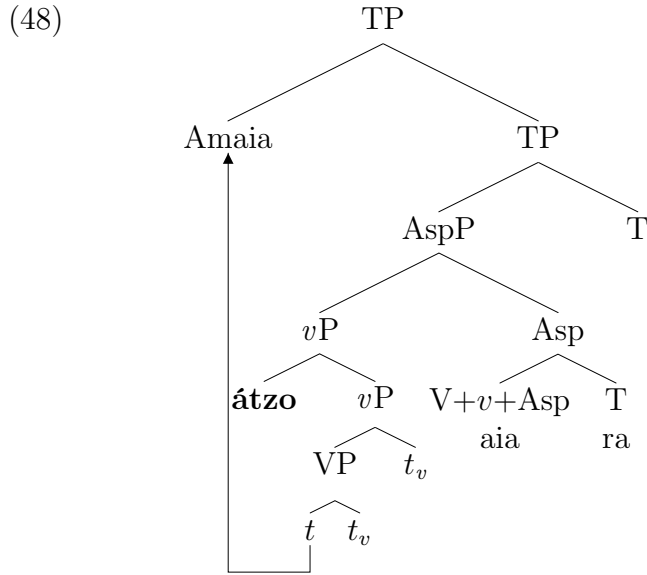
<sup>29</sup>As shown in §5, left dislocated phrases are interpreted as topics. This makes left dislocation of *txarto* ‘badly’ in this example somewhat odd if the proper context is not given. For reasons that will become clear in that chapter, this example is appropriate in a context in which *txarto* is uttered in a context in which the relevant question is which exam Jon did badly and which exam he did well. This sentence asserts that he did the last exam (as opposed to others) badly.



After movement, the only overt constituent left inside the higher VP is the indirect object *Mirenei*. Since the higher VP is the complement of *v*, the NSR correctly predicts that *Mirenei* is the most prominent constituent in *vP*, and consequently it has sentence stress. Sentence (46b) is the same as (46a), except that both the direct and indirect objects are moved to the left of the subject. In the resulting structure, the subject *neuk* is the only overt constituent inside *vP*, which means that it receives sentence stress.

Example (43c) contains the adverbial *txarto* ‘badly’. As we saw in §4.4, adverbials of this type are generated in the lowest VP in a VP-shell structure (cf. 41), which means that in the unmarked order, they appear to the left of the verb, and receive sentence stress. In (43c), however, this adverbial is left dislocated. The result is sentence stress on the object, since it is the only overt constituent inside VP.

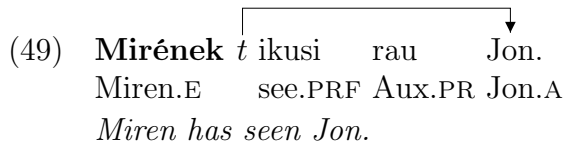
Finally, the unaccusative sentence in (43d) contains the adverbial *atzo* ‘yesterday’, which, as shown in §4.4, can be adjoined to any of the projections in the basic clause structure (VP, *vP*, AspP, TP). The internal argument *Amaia* is left dislocated from inside the VP to the left of the adverbial. In the resulting structure, *atzo* is assigned sentence stress by the NSR:



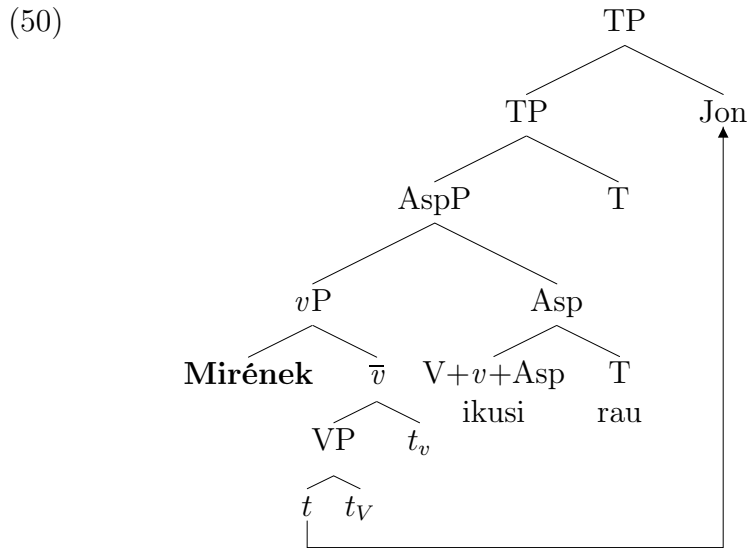
This is the case if the adverbial is adjoined to VP or *vP*. On the other hand, if it is adjoined higher (AspP or TP), the result would be sentence stress on the verb. This prediction is borne out: this sentence can also be pronounced with sentence stress on the verb. This type of stress pattern is discussed in §4.5.3 below.

#### 4.5.2 Right Dislocation

Right dislocation has basically the same effects as left dislocation on the NSR: when a constituent that would have sentence stress in the unmarked order moves, some other constituent can end up with sentence stress. Consider the following example, which is parallel to the left dislocation example in (43):



I assume that right dislocation, like left dislocation, results in adjunction to TP:



Just as in left dislocation, movement of the object *Jon* to TP results in the subject *Mirenek* having sentence stress.

The following examples of right dislocation are parallel to the left dislocation ones in (46):

- (51) a. Nik **Mirénei** *t* emon netzan kotxe bat.  
 I.E Miren.D give.PRF Aux.PST car a.A  
*I gave Miren a car.*
- b. **Néuk** *t t* emon netzan kotxe bat Mirenei.  
 I.E give.PRF Aux.PST car a.A Miren.D  
*I gave Miren a car.*
- c. Jonek **atzanengoko asterketí** *t* ei ban txarto.  
 Jon.E last exam.A.SG do.PRF Aux.PST badly  
*Jon did the last exam badly.*
- d. **Átzo** *t* aia san Amaia.  
 yesterday arrive.PRF Aux.PST Amaia.A  
*Amaia arrived yesterday.*

In (51a) the direct object is right dislocated, resulting in sentence stress on the indirect object. In (51b), both objects are moved, so that the subject has sentence stress. In (51c), the preverbal adverb is right dislocated, and the object has sentence stress.

Finally, in (49d), the unaccusative subject *Amaia* moves to the right, leaving the adverbial *atzo* in a position to be assigned sentence stress.

To sum up so far, both left and right dislocation can have the same predictable effect on sentence stress. They both involve movement of some constituent to a high position in the clause (adjunction to TP), which results in sentence stress on some constituent which would otherwise not have sentence stress.

### 4.5.3 Sentence Stress on Verbs

In all the examples of movement seen so far, movement of some XP results on the assignment of sentence stress to some other XP. However, both left and right dislocation can also result in sentence stress on verbs. In this section, I discuss sentences of this type, arguing that the NSR makes correct predictions in this case too.

That movement of some XP can result in sentence stress on the verbal complex is seen most clearly in unaccusative sentences:

- (52)  $\overbrace{t \text{ Aiá } \text{ ra } \text{ Amaia.}}$   
 arrive.PRF Aux.PR Amaia.A  
*Amaia has arrived.*

In this example, the internal argument *Amaia* is right dislocated, leaving the verbal complex as the only constituent inside TP. The result is sentence stress on the verbal complex:

- (53)

Right dislocation of both the subject and object in transitive sentences can have the same effect:

- (54) a.  $\overbrace{t t \text{ Ikusí } \text{ rau } \text{ Mirenek Jon.}}$   
 see.PRF Aux.PR Miren.E Jon.A  
*Miren has seen Jon.*

- b. **t t Ikusí rau Jon Mirenek.**  
 see.PRF Aux.PR Jon.A Miren.E  
*Miren has seen Jon.*

Similarly, left dislocation can also result in sentence stress on the verbal complex:

- (55) a. **Amaia t aiá ra.**  
 Amaia.A arrive.PRF Aux.PR  
*Amaia has arrived.*
- b. **Mirenek Jon t t ikusí rau.**  
 Miren.E Jon.A see.PRF Aux.PR  
*Miren has seen Jon.*
- c. **Jon Mirenek t t ikusí rau.**  
 Jon.A Miren.E see.PRF Aux.PR  
*Miren has seen Jon.*

For instance, movement of *Amaia* in (55a) leaves the verbal complex as the only constituent inside TP, which means that it has sentence stress:

- (56)

Similarly, in the transitive sentences in (55b–c), left dislocation of both the subject and the object results in sentence stress on the verbal complex.

The following examples show that, as expected, when there is both left and right dislocation in the same clause, the result can also be sentence stress on the verbal complex:

- (57) a. **Mirenek t t ikusí rau Jon.**  
 Miren.E see.PRF Aux.PR Jon.A  
*Miren has seen Jon.*
- b. **Jon t t ikusí rau Mirenek.**  
 Jon.A see.PRF Aux.PR Miren.E  
*Miren has seen Jon.*

#### 4.5.4 Interim Conclusion

In this section, I have argued that the NSR proposed in §3 provides a satisfactory account of the distribution of stress in sentences. To the extent that the underlying assumptions about the structure of sentences in Basque are correct, this provides further support for the version of the NSR defended in this thesis. In the following section, I discuss some of these assumptions, arguing that they are correct.

#### 4.6 Right Dislocation, Stress, and Verb Movement

In §§4.5.2–4.5.3, we saw several sentences where one or more XPs appear to the right of the verb. For instance, in the following example, the object is to the right of the verbal complex:

- (58)  $\overbrace{\text{Miréne}k \ t \ \text{ikusí} \ \text{rau} \ \text{Jon.}}^{\downarrow}$   
 Miren.E see.PRF Aux.PR Jon.A  
*Miren has seen Jon.*

The hypothesis that sentences of this type involve rightward movement is crucial in order to explain the sentence stress facts. However, A. Elordieta (2001) claims that these sentences do not involve rightward movement. Rather, they are the result of head movement of the verbal complex to the left of the apparently rightward-moved constituent:<sup>30</sup>

- (59) [ Subject [ [V-Aux] [ Object *t*]] ]

This structure and the one proposed above are clearly different, and make very different predictions. For instance, they make different predictions with respect to the relative scope of the subject and the object in this sentence. These predictions are, in part, the topic of §5.10. In this section, I concentrate on certain phonological and morphological aspects of this analysis. In particular, §4.6.1 discusses the account of

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<sup>30</sup>In fact, this structure is simpler than what A. Elordieta assumes, since movement of the verbal complex is to the head of CP, which, in her analysis is left-headed. This implies that the subject has also moved further up. These details are not important for the purposes of this section.

sentence stress implied by this analysis, which must be clearly different from the one proposed in this thesis. In §4.6.2, I discuss the hypothesis that the verbal complex can undergo head movement.

#### 4.6.1 The NSR and Linear Order

The analysis proposed by A. Elordieta needs a different version of the NSR for Basque. If we applied the version of the NSR proposed in this thesis, sentence stress would be (wrongly) predicted to be on the object, rather than the subject.<sup>31</sup> She proposes (pp. 138–141) that the NSR does not depend on syntactic structure, but on linear order. Her proposal for Basque can be stated as follows:

- (60) In Basque, sentence stress is on the rightmost constituent to the left of the verbal complex.

This generalization captures many of the facts discussed in this chapter. In fact, we started the discussion of sentence stress in Basque in §4.3 precisely with this generalization. However, this generalization does not account for sentences in which the verbal complex has sentence stress:

- (61) a. Mirenek **ikusí rau** Jon.  
 Miren.E see.PRF Aux.PR Jon.A  
*Miren has seen Jon.*
- b. **Ikusí rau** Mirenek Jon.  
 see.PRF Aux.PR Miren.E Jon.A  
*Miren has seen Jon.*

As shown in §4.5.3, the analysis defended in this chapter accounts for these cases in terms of both left and right dislocation. Under A. Elordieta's analysis, the following amendment to her proposal about sentence stress is necessary:

- (62) In Basque, sentence stress is *on the verbal complex, or on the rightmost constituent to the left of the verbal complex.*

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<sup>31</sup>This true also for other versions of the NSR which are structure sensitive, such as Cinque's (1993) or Zubizarreta's (1998).

This generalization, together with A. Elordieta's structure for the above sentences, correctly describes all the stress facts discussed in this chapter.<sup>32</sup>

However, this generalization about sentence stress in Basque is just a generalization. In particular, it correctly describes the special status of the verbal complex, but it does not explain why it has a special status. Furthermore, the generalization also contains an unexplained disjunction. The NSR defended in this thesis accounts for all the facts without mentioning explicitly the verbal complex and without disjunctions. In this sense, the NSR explains the generalization needed by A. Elordieta. However, the NSR is not compatible with the analysis of phrases appearing to the right of the verbal complex in terms of leftward movement of the verb. Thus, her analysis relies strongly on arguments against an analysis in terms of rightward movement. These arguments are reviewed in §5.10, where I argue that righthward movement is indeed possible in Basque, thus allowing us to preserve the more principled account of sentence stress proposed in this chapter.

#### 4.6.2 The Morphosyntax of Compound Tenses

As was noted above, A. Elordieta (2001) proposes that phrases appearing to the right of the verbal complex are the result of head movement of the latter to the left of the former:

$$(63) \quad [ \text{Subject} [ [ \text{V-Aux} ] [ \text{Object } t ] ] ]$$

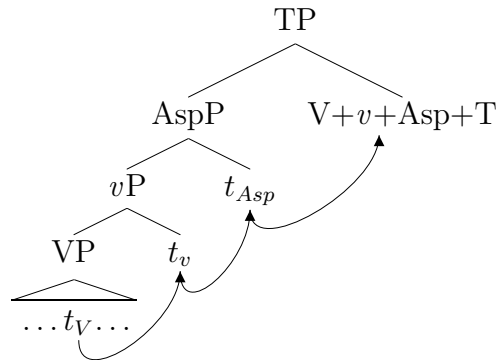
In §4.2.1 above, I proposed an analysis in which the participle and the auxiliary (i.e the verbal complex) do not form a single word in the syntax. However, in A. Elordieta's analysis the assumption that they do form a single syntactic head is crucial, since, in her analysis, the verbal complex undergoes head movement. In this section, I discuss the evidence given by her and others in favor of this assumption, arguing that the analysis proposed here provides a better account of the relevant facts.

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<sup>32</sup>This is not entirely correct. As we saw in §4.3, the facts are slightly different in sentences with simple tenses, where sentence stress is on a phrase formed by the verb and the preverbal constituent. Sentence stress in this case is neither on the preverbal constituent nor on the verb itself, but on a phrase containing both.

In the analysis of verb movement defended by A. Elordieta, both simple and compound tenses involve movement of the verb all the way up to T:

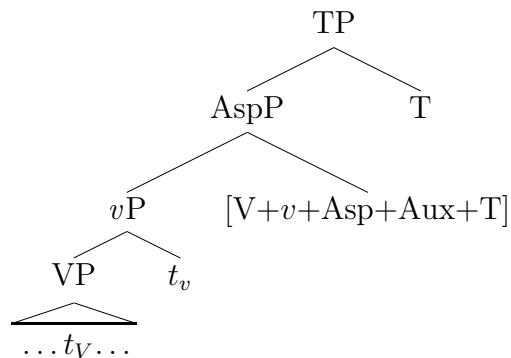
(64) *A. Elordieta 2001: simple and compound tenses.*<sup>33</sup>



For ease of exposition, I will refer to this account of compound tenses as the ‘alternative analysis’. In the analysis defended here, this structure is assumed only for simple tenses. In compound tenses, the V+v+Asp complex (i.e. the participle) stays in Asp, and an auxiliary is inserted in T. Furthermore, at PF, the participle and the auxiliary form a single word via morphological merger:

(65) *Merger of participle and auxiliary*

$[V+v+Asp] [Aux+T] \rightarrow [V+v+Asp+Aux+T]$



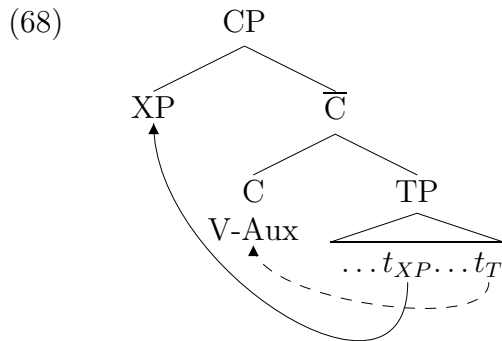
In both analyses, the participle and the auxiliary form a single word at PF. However, this is the result of different operations in the two accounts: head movement in the alternative analysis, and morphological merger in the account defended here.

<sup>33</sup>There are certain details in A. Elordieta’s analysis that have been ignored here. These are not important for the purposes of this section.

Several authors provide evidence in favor of the alternative analysis (see Ortiz de Urbina 1989, 1995, G. Elordieta 1997b and A. Elordieta 2001). The strongest argument put forth in these works has to do with the syntax of focussed and *wh*-phrases. These phrases have to be left-adjacent to the participle-auxiliary complex:

- (66) a. Jonek **ser** irakurri rau?  
 Jon.E what.A read.PRF Aux.PR  
*What has Jon read?*
- b. \*Jonek irakurri rau ser?      c. \*Ser Jonek irakurri rau?
- (67) a. Jonek **liburu<sub>F</sub>** irakurri rau.  
 Jon.E book.A read.PRF Aux.PR  
*Jon read the BOOK.*
- b. \*Jonek irakurri rau liburu<sub>F</sub>.      c. \*Liburu<sub>F</sub> Jonek irakurri rau.

Ortiz de Urbina (1989) proposes that this adjacency requirement has the same analysis as the V2 phenomenon in Germanic languages. Specifically, he proposes that the focussed or *wh*-phrase moves to the specifier position of CP, which, by hypothesis, is left-headed in Basque, and that the participle-auxiliary complex moves to C:



If this analysis is correct, it provides evidence for analyzing the participle-auxiliary complex as forming a single word in the syntax, since it is moving as a unit to a head position (C). However, one of the central theses put forth in this dissertation is that this is in fact *not* the correct syntax for focussed or *wh*-phrases. As argued for in §5, the adjacency between the verb and these phrases needs to be analyzed in very different terms, which do not involve movement of any of the verbs or of the focussed or *wh*-phrase. Rather, it is the consequence of prosodic requirements imposed on these phrases.

Before reviewing the other arguments given by the authors cited above, I would like to point out a problem with this analysis which is not dealt with in detail in those works. In particular, since both simple and compound tenses have the same syntax (they both involve movement to T), it is not clear what accounts for one of the basic morphological differences between the two tenses: simple ones involve a single morphological word, and compound ones two words. In the analysis proposed here, this is a direct consequence of syntax: in simple tenses a single complex head is formed, and in compound tenses, two complex heads are formed. Thus, the account involves a simple one-to-one mapping from (complex) syntactic heads ( $X^{\max}$ ) to morphological words. Furthermore, the related fact that the tensed verb in compound tenses contains an auxiliary root is the consequence of the requirement that T be attached to a verbal head. In simple tenses, this requirement is satisfied by movement of the verb to T, and in compound tenses, by inserting an auxiliary verb root.

Ortiz de Urbina (1989), who defends the alternative analysis, accounts for these facts as follows. He proposes that head movement can result in two different configurations: ‘amalgamation’ and adjunction. In the case of movement of the verb to T, he represents these two configurations as follows:<sup>34</sup>

(69) *Head movement in Ortiz de Urbina 1989*

a. *Amalgamation*

V/T

b. *Adjunction*

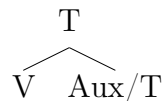


He claims that this is the difference between the two types of tenses. Even though both involve movement of the verb to V, in simple tenses this movement results in amalgamation, and in compound tenses, in adjunction. Furthermore, he proposes that the requirement that T be attached to a verbal head can only be satisfied via amalgamation. Since, by hypothesis, in compound tenses, the verb and T do not amalgamate, an auxiliary verb is inserted to satisfy the requirement:

---

<sup>34</sup>For ease of exposition, I have ignored the *v* and Asp projections in these representations. Thus, V in these examples stands for  $V+v+\text{Asp}$ . These details are irrelevant to the argument.

(70) *Compound tenses in Ortiz de Urbina 1995*



The question that this analysis raises is what the real difference is between amalgamation and adjunction. That is, the notational difference represented in (69) must correlate with some difference that has syntactic or morphological import: amalgamated V/T and adjoined [<sub>T</sub>V T] must be to different types of syntactic objects. For instance, one could take the notation in (69a) seriously, and propose that there are two boundary symbols, / and –, each corresponding to a different form of concatenation between heads. Thus amalgamated V and T would be V/T, and the corresponding adjunction structure would be V–T. However, this is not possible in current theories of syntax, given that boundary symbols are no longer hypothesized to be syntactically or morphologically relevant.

Another possibility would be to equate amalgamation with *fusion*, in the sense of Distributed Morphology (see Halle and Marantz 1993). In this theory, fusion is posited when two separate syntactic heads are realized by a single vocabulary item.<sup>35</sup> In this case, the two heads are joined into a single head, so that only one vocabulary item can be inserted in it. However, if the verb and T were fused in simple tenses in Basque, we would expect the resulting word to be morphologically simple. This is clearly not the case, since tensed verbs have a clear internal structure, with a distinct verbal root, a tense affix, and, as noted in footnote 1, several agreement affixes. For instance, consider the following paradigm for the verb *jun* ‘go’:

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<sup>35</sup>Fusion in this theory is different from merger. When two heads are merged, they still constitute separate morphemes, as in all the examples of merger that have been proposed in this chapter. When they are fused, the resulting object is a single morpheme.

(71) *jun* ‘go’

	PRESENT	PAST
1SG.ABS	n-u	n-ixu-n
2SG.ABS	s-us	s-ixuse-n
3SG.ABS	d-u	Ø-ixu-n
1PL.ABS	g-us	g-ixuse-n
2PL.ABS	s-use	s-ixuse-n
3PL.ABS	d-us	Ø-ixuse-n

In this paradigm, there are two clearly defined affix positions: an absolutive agreement prefix, and a tense suffix (-*n* in the past and -Ø in the present). Although it is not clear what the analysis of the material in between should be (i.e. whether it is a single V morpheme or whether it is decomposable further), one cannot claim that tensed verbs like these have no internal structure. Therefore, amalgamation cannot be fusion.

Thus, it is not clear what ‘amalgamation’ is, or whether it is in fact different from fusion. Since the analysis defended here does not need to posit a difference between amalgamation and adjunction, it is to be preferred, unless of course, some independent evidence is given in its favor. The authors cited above do provide several arguments in favor of the alternative analysis. These are summarized in A. Elordieta 2001 (§5.2.2).

A. Elordieta (2001, p. 181), citing Hualde, Elordieta, and Elordieta 1994, briefly notes that, in the pitch accent dialects of Basque (such as Ondarroa Basque, cf. §2), the verb and auxiliary behave as a single word with respect to stress. This can be illustrated with the following examples from Ondarroa Basque:

- (72) a.  $\overline{\text{Ne}}\underline{\text{u}}$   $\underline{\text{e}}\overline{\text{torr+i}}$   $\underline{\text{na}}$   
 I.A come+PRF Aux.PR  
*I have come.*
- b.  $\overline{\text{Ne}}\underline{\text{u}}$   $\underline{\text{e}}\overline{\text{torr+ten}}$   $\underline{\text{na}}$   
 I.A come+IMP Aux.PR  
*I come.*

Recall from §2 that a stress domain is delimited by an initial rise in pitch (i.e. a left parenthesis) and a final drop in pitch (i.e. a right parenthesis). In the examples in (72), there are two such domains: the subject *neu* (which does not have an initial rise because it does not have enough syllables, cf. §2), and the compound tense verb *etorri/etorten na*. The question is whether the stress domain formed by the verbal complex is a phrase or a word. This question is not easy to answer, since, in both cases, stress is penultimate, i.e. the drop in pitch begins on the penultimate syllable. However, in (72a), surprisingly, stress is on the final syllable. As we saw in §2 (Appendix B), final stress is possible at the phrasal level when the final vowel is deleted. Thus, final stress in (72a) can be accounted for if we posit an underlying final vowel in the auxiliary *na* which is later deleted.<sup>36</sup> This means that, with respect to the stress rules proposed in §2, the participle and auxiliary form a phrase.

But now consider example (72b). In this case, stress is penultimate, not final, even though the same auxiliary is used. As also shown in §2, vowel deletion does *not* result in final stress, but in penultimate stress, at the word level, i.e. vowel deletion does not affect the position of word level stress. This must mean that *etorten na* in (72b) is an accented *word*.<sup>37</sup> All these facts suggest that the participle and auxiliary form a single word, and that this word forms a phrase by itself.

Thus, stress facts provide a strong, albeit complex, argument for the status of the verbal complex in compound tenses as a word.<sup>38</sup> However, this argument shows that

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<sup>36</sup>Hualde (1996) presents further evidence for the existence of this empty vowel in this auxiliary (and others). In Ondarroa Basque, as in other dialects, there is a rule that raises *a* to *e* in the context [+high]C<sub>0</sub>\_. In this dialect, this rule must meet one further condition: *a* must be in word final position. As exemplified in (72a), the vowel *a* in the auxiliary is not raised, even though it is in final position. Furthermore, the specific syntactic environment where *na* is in this example does not, in general, block this rule, as witnessed by the fact that the vowel in the auxiliary *da* (which is the same as *na* except that it is inflected for third person absolutive agreement) does undergo the rule in this environment. Positing an underlying vowel in *na* (but not *da*) accounts for this fact too.

<sup>37</sup>Since the only difference between (72a) and (72b) is in the aspectual suffix, perfective *-i* in the former and imperfective *-ten* in the latter, this also means that *-ten* is a marked suffix and *-i* is not.

<sup>38</sup>In other pitch accent dialects where stress and other rules are different from Ondarroa Basque, the participle and auxiliary also form a single word with respect to stress. For instance, in Lekeitio Basque there is no vowel deletion rule in the context described above, and phrase level stress is final (in contrast to penultimate in Ondarroa). As shown in Hualde, Elordieta, and Elordieta 1994, the participle and auxiliary also behave as a single word with respect to stress, even though the surface facts are different from Ondarroa Basque. This strongly suggests that the hypothesis is correct, since it accounts for facts that, on the surface, look different.

the verbal complex is a *phonological*, not necessarily morphological or syntactic, word. The facts are perfectly compatible with an analysis, such as the one defended here, in which the participle and auxiliary are separate words in the syntax, but which are joined into a single word at PF.

A similar argument for the alternative analysis is presented in G. Elordieta 1997b. Like the one discussed above, it shows that the participle and auxiliary form a single phonological word. In the dialect of Lekeitio,<sup>39</sup> a vowel optionally assimilates in all features to an immediately preceding vowel in hiatus contexts. This rule applies only word internally, as exemplified below:<sup>40</sup>

(73) *Assimilation word-internally:*

- |    |                                   |    |   |
|----|-----------------------------------|----|---|
| a. | biar → biir<br>need               | b. | siesta → siista<br>nap                  |
| c. | basu+ak → basuuk<br>forest+ABS.PL | d. | soru+en+a → soruuna<br>crazy+SUP+ABS.SG |

(74) *No assimilation across word boundaries:*

- |    |   |
|----|---|
| a. | seru asula → *seru usula<br>sky blue.ABS.SG |
| b. | paga eraiñ → *paga araiñ<br>pay make        |

The only (apparent) exception to this condition is that it can apply across the participle-auxiliary boundary:

(75) *Assimilation in participle-auxiliary contexts:*

- |    |  |
|----|--|
| a. | ikasi eben → ikasi iben<br>learn.PRF Aux.3ERG.PL.PST   |
| b. | atrapa eban → atrapa aban<br>catch.PRF Aux.3ERG.SG.PST |

<sup>39</sup>Lekeitio is a town neighboring Ondarroa. The two dialects are very similar, but with important differences. It is not clear whether the assimilation rule discussed below is active in Ondarroa Basque, since the vowel that would undergo assimilation is deleted by the rule discussed in Appendix B to §2. For discussion of this rule in Ondarroa Basque, see Hualde 1991a (p. 64).

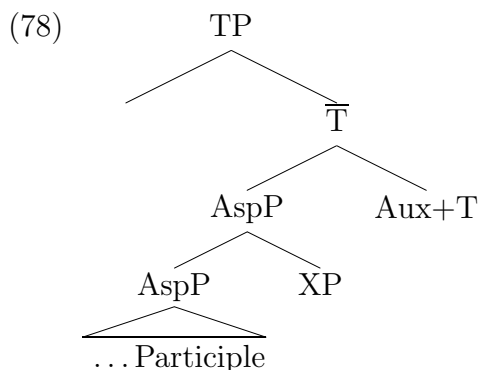
<sup>40</sup>I have ignored several details of this rule which are not necessary for the argument. See G. Elordieta 1997b (§2) and Hualde, Elordieta, and Elordieta 1994 (pp. 41–42) for details.

Vowel assimilation, then, constitutes evidence for the status of the participle and auxiliary as a single phonological word. As argued for above, this can be analyzed as the result of morphological merger.

Another argument for the alternative analysis given by all the authors cited above is the fact that the participle and the auxiliary have to be adjacent.<sup>41</sup> The following examples are adapted from A. Elordieta 2001:

- (76) a. \*Karlos etorri gaur de.  
 Karlos.A come.PRF today Aux.PR  
*Karlos came today.*
- b. Karlos etorri re gaur.  
 Karlos.A come.PRF Aux.PR today
- (77) a. \*Karlosek irakurri liburu rau.  
 Karlos.E read.PRF book.A.SG Aux.PR  
*Karlos has read the book.*
- b. Karlosek liburu irakurri rau.  
 Karlos.E book.A.SG read.PRF Aux.PR

Neither adjuncts (76) nor arguments (77) can intervene between the participle and the auxiliary. This generalization is true for all adjuncts and arguments. The question raised by these examples is why they cannot have the following structure, where the XP is the adjunct/argument intervening between the participle and the auxiliary:



<sup>41</sup>There are two exceptions to this generalization. First, certain modal particles, such as *ete* ‘evidently’, if present, are placed between the participle and the auxiliary. In G. Elordieta 1997b, they are analyzed as functional heads that are picked up by the verb on its way up to T, i.e. they are part of the participle-auxiliary word. Second, in negative sentences, the order participle-auxiliary is reversed, and they do not have to be adjacent. On negative sentences, see Laka 1990.

In the case of adjuncts, XP could be base generated adjoined to AspP, and in the case of arguments, it could move there from inside *v*P. If the participle and auxiliary form a single word, this generalization is accounted for. In the analysis defended here, this is a consequence of morphological merger. As argued for by Bobaljik (1996), adjuncts (or arguments moved to an adjunct position) do not block morphological merger. Thus, even if the intervening phrase in (76–77) were in the place shown in (78), the ungrammaticality of (76a–77a) is accounted for in the present analysis.

To summarize, the present analysis accounts for two kinds of facts. First, the participle and auxiliary are separate morphological words because they do not form a single complex head in the syntax. Second, in terms of word order and phonological domains, they form a single word due to morphological merger. The alternative account can explain the phonological and word order facts, but is either not explicit or unclear about the morphological fact. Thus, given the evidence presented so far, the analysis defended here provides a better account of the syntax, morphology and phonology of compound tense verbs.<sup>42</sup>

To conclude this section, A. Elordieta 2001 proposes that phrases appearing to the right of the verbal complex are not moved to the right. Rather, they are the result of movement of the verbal complex to the left. As shown above, this implies that (i) a different version of the NSR than the one defended in this thesis is needed for Basque, and (ii) the verbal complex forms a single complex head in the syntax. In this section, I have provided arguments against both proposals. This lends support to the analysis proposed in this chapter, in which phrases appearing to the right of the verb are right dislocated. Further arguments that this is the correct analysis are

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<sup>42</sup>There are two more pieces of data provided by the authors mentioned above in favor of the alternative analysis. First, they argue that it accounts for the fact that the auxiliary cannot appear in the first position in the sentence. This fact is accounted for by morphological merger in the analysis defended here. Since the participle and the auxiliary must merge, the participle always appears to the left of the auxiliary. The other argument, provided by G. Elordieta (1997b), is highly theory internal. Since he assumes Kayne's (1994) LCA, the only way in which the participle can appear to the left of the auxiliary is by moving the former to the left of the latter. At several points in this thesis, I provide evidence that the LCA does not hold in Basque. First, the LCA is incompatible with the Nuclear Stress Rule proposed in §3, which, as I show in the present chapter, provides a satisfactory account of sentence stress in Basque. Second, §5.10 presents evidence from reconstruction that there is rightward movement in Basque.

given in §5.10.

#### 4.7 The Domain of Application of the NSR

In this chapter, I have argued that a structure sensitive NSR accounts for the placement of sentence stress in Ondarroa Basque. On the other hand, in §2, I showed that Ondarroa Basque has certain phrase level rules which are not structure sensitive. This was exemplified in (16) above, repeated below as (79).

- (79) a. [[ nire aman ] lagune ]    nire aman lagune  
           my mother.G.SG friend.A.SG  
           *my mother's friend*
- b. [ nire [ lagun andixe ] ]    nire lagun andixe  
           my friend big.A.SG  
           *my great friend*

Although these two DPs have clearly different structures, their stress pattern is exactly the same: there is a single stressed syllable (realized as a drop in pitch starting on that syllable), i.e. the penultimate one. Applying the NSR in these cases would clearly yield the wrong results. Since all the words in these DPs are unaccented (i.e. unstressed at the word level), the NSR would in fact have nothing to say about them.

These facts raise two questions. First, are these two analyses compatible? If they are, it would mean that the rules proposed in §2 apply in some phrases, and the NSR in others. If this is the case, what exactly are the types of phrases that each set of rules applies to, and is there a principled way of distinguishing them? In this section, I address these questions, arguing that both sets of rules are needed: the NSR applies to DPs and to the verbal complex as if they had no internal structure (i.e. it treats them as if they were English words); and stress within these phrases is determined by the rules proposed in §2.<sup>43</sup> This particular answer to these questions gives DPs and the verbal complex a special status. Although I cannot give a satisfactory answer to this question, some suggestions are made at the end of this section.

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<sup>43</sup>That the verbal complex forms a phrase by itself within which the rules in §2 apply was shown in §4.6.2 above.

First, we need to see whether all the facts can be accounted for in a unified way. As we saw above, the facts accounted for by the rules in §2 cannot be accounted for by the NSR. Thus, it would be interesting to see whether the facts about sentence stress reviewed in this chapter can be accounted for by the rules proposed in §2. The answer in this case is also a negative one. The rules in §2 assign stress to the penultimate syllable in the phrase, and to all accented words in the phrase. If there is more than one stressed syllable, the leftmost one is the most prominent one. Sentence stress in Ondarroa Basque does not work like this. For instance, in the following example (and in many others discussed in this chapter), sentence stress is not on the first stressed syllable:

- (80) Miréne**k** **Jón** ikusí rau.  
 Miren.E Jon.A see.PRF Aux.PR  
*Miren has seen Jon.*

Therefore, we need both sets of rules. It seems that the generalization governing their application is the following one:

- (81) The internal structure of DP and the verbal complex is invisible to the NSR.  
 Stress inside these phrases is determined by the rules in §2.

The basic idea is that DPs and verbal complexes in Basque are treated by the NSR like words are in English. Their internal structure is irrelevant.

Before we illustrate this generalization, I would like to clarify what is meant by DP. In Basque, the structure of DP is [NP D Case]. The case morpheme is always suffixed to D, and when D is not overt, it is suffixed to the last word in NP.<sup>44</sup> In some cases, such as the definite determiner *-a*, D itself is a suffix:

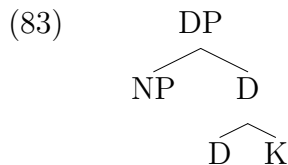
- (82) a. gixon +a +k (→ gixonak)  
 man +DET +ERG  
*the man (ergative)*

---

<sup>44</sup>Some determiners, such as numerals ‘three’ and above, appear to the left of NP. In this case, the case morpheme is suffixed to the last word in NP.

- b. lagun bat +ri (→ lagun batei)  
 friend a +DAT  
*to a friend*

I assume that DPs have the following structure, where K is the case morpheme:



All phrases that would be translated into English as PPs also have this structure. In some cases, the English preposition is realized as a case suffix in Basque:

- (84) a. gixon +a +ntzako (→ gixonantzako)  
 man +DET.SG +BEN  
*for the man*
- b. lagun bat +gas (→ lagun bateas)  
 friend a +COM  
*with a friend*

In others, English prepositions are translated as nouns. More specifically, the phrase contains a noun with basically the same semantics as the English preposition. This noun is inflected for some case (e.g. *inesive*), and what corresponds to the English DP is realized as a DP inflected for genitive case:<sup>45</sup>

- (85) mai bat +n gain +an (→ mai baten gañin)  
 table a +GEN top +IN  
*on a table*

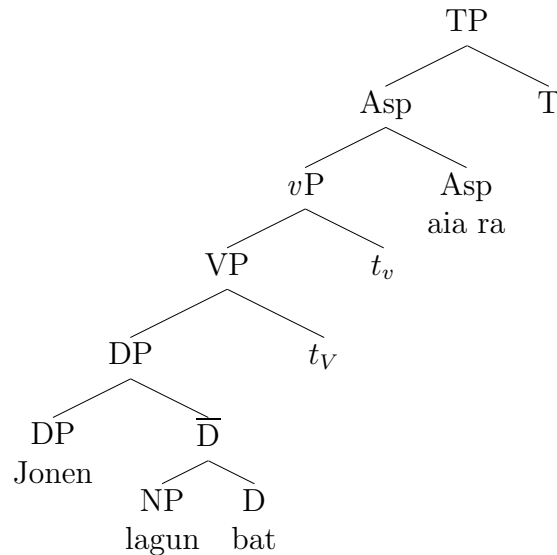
In sum, the term ‘DP’ in generalization (81) refers to more types of phrases than it might seem at first.<sup>46</sup>

Let us then illustrate generalization (81) with a sentence containing a complex DP:

<sup>45</sup>This is similar to English ‘complex prepositions’, such as *on top of*.

<sup>46</sup>In fact, this term also applies to non-verbal predicates. As argued for in Artiagoitia 1997 these are also DPs.

- (86) **Jonen lagún bat** aia ra.  
 Jon.G friend a.A arrive.PRF Aux.PR  
*A friend of Jon's has arrived.*



Inside DP and the verbal complex, the rules in §2 generate the following grids:

- (87)
- |                 |        |        |        |
|-----------------|--------|--------|--------|
| *               | line 2 | *      | line 2 |
| *)              | line 1 | *)     | line 1 |
| *( * * ) *      | line 0 | *(*) * | line 0 |
| Jonen lagun bat |        | aia ra |        |

Then, the NSR is used to determine sentence stress:

- (88)
- |  |          |
|--|----------|
| *  | line 6   |
| —————*—————)   | line 5   |
| —————*—————*—)   | line 4   |
| —————*—————)   | * line 3 |
| —————*—————)   | * line 2 |
| [[[[[Jonen lagun bat] t <sub>V</sub> ] t <sub>v</sub> ] aia ra]] |          |

To sum up so far, there are certain parts of the structure in Ondarroa Basque within which the NSR does not apply. In these structures, certain language particular rules (those in §2) are used to determine the placement of stress. In English, a similar condition on the application of the NSR is needed, since the internal structure of words is invisible, that is, inside words, the NSR does not determine stress placement, but a set of language particular rules (e.g. those in Halle 1998). This means that the NSR,

although universal, is subject to parametric variation in terms of which domains it applies to:

(89) *The NSR and Parametric Variation*

The NSR does not apply below domain D, where the choice of D is language particular.

In English, D is the word, and in Ondarroa Basque, D is DP and the verbal complex.

This condition is given further support by languages in which the choice of D is different from both English and Ondarroa Basque. In Spanish, as argued for by Zubizarreta (1998), stress in phrases is determined by a structure dependent NSR.<sup>47</sup> Unlike in English, however, Spanish compounds are not subject to the NSR. Their internal structure is irrelevant for the placement of stress in them, as can be seen in the following examples:

- (90) a. tela + araña → telaráña  
           cloth spider spider-web
- b. hijo + puta → hijopúta  
           son whore son of a whore
- (91) a. para + aguas → paráguas  
           stop waters umbrella
- b. come + mierda → comemiérda  
           eat shit idiot

There is a fundamental difference between stress in these compounds and the corresponding phrases:

- (92) a. <sup>2</sup>tela de <sup>1</sup>arañas  
           cloth of spiders  
           *cloth made of spiders*
- b. <sup>2</sup>hijo de <sup>1</sup>puta  
           son of whore  
           *son of a whore*

---


<sup>47</sup>Her version of the NSR is different from the one defended here. However, they both make the same basic predictions for Spanish phrases.

- (93) a. <sup>2</sup> Para <sup>1</sup> aguas.  
 stops waters  
*She stops waters.*
- b. <sup>2</sup> Come <sup>1</sup> miérda.  
 eats shit  
*He eats shit.*

The phrases in (92–93) contain two word level stresses (one in each word, ignoring prepositions, which never bear stress in Spanish). However, the compounds in (90–91) only have one word level stress. The NSR can account for the stress pattern in the phrases,<sup>48</sup> but not in the compounds. In fact, the stress pattern of compounds is the expected one given word level stress rules in this language (see, among others, Harris 1995, Roca 1997 and Arregi and Oltra-Massuet 2001).

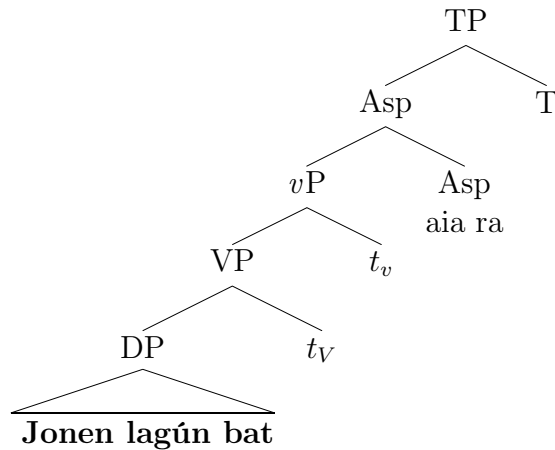
This means that the domain of application of the NSR is different in the three languages. In English, the internal structure of words is invisible to the NSR (but not that of compounds); in Spanish, the structure below compounds is invisible; and in Ondarroa Basque, the structure below DP and the verbal complex is ignored by the NSR.

An important question raised by the Basque data is why both DP and the verbal complex have a special status. Unfortunately, I cannot give a satisfactory answer to this question. I would simply like to note that this is possibly related to the fact that both DPs and verbal complexes are islands to movement. As we have seen at several points in this chapter, the two units forming the verbal complex cannot be separated. This basically means that the verbal complex is an island to movement. That DPs are islands in Basque is illustrated in the following:

- (94) a.  \*Jonen Mirenek [t lagun bat] ikusi rau  
 Jon.G Miren.E friend a.A see.PRF Aux.PR  
*Jon, Miren has seen a friend of.*

<sup>48</sup>Specifically, all these phrases have a head-complement structure, and the complement is more prominent than the head.

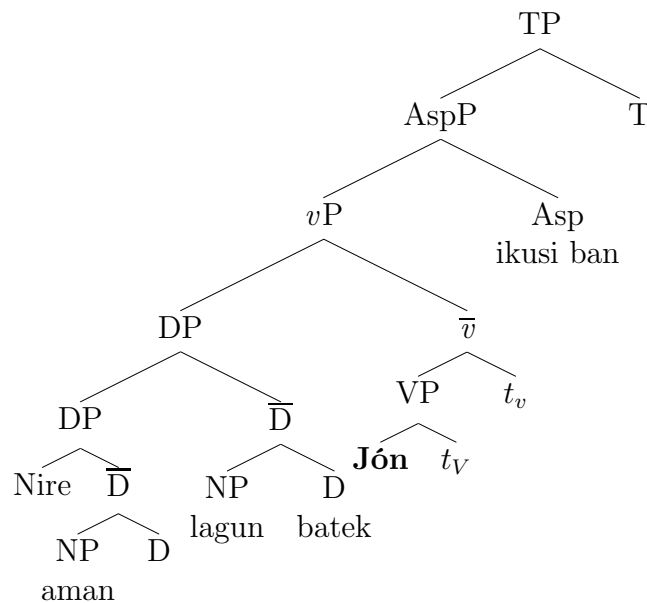




Since the NSR does not apply below DPs, the internal structure of *Jonen lagun bat* is irrelevant. As can be easily seen in the structure given, this DP is the most deeply embedded overt constituent: it is dominated by more nodes than any other overt constituent. The same observation is true of all the examples discussed in this chapter.

The main reason for this fact is that the internal structure of DPs is irrelevant for the NSR. This is best illustrated with sentences that contain a complex specifier:

- (96) Nire aman lagun batek **Jón** ikusi ban.  
 my mother.G.SG friend a.E Jon.A see.PRF Aux.PRF  
*A friend of my mother's saw Jon.*

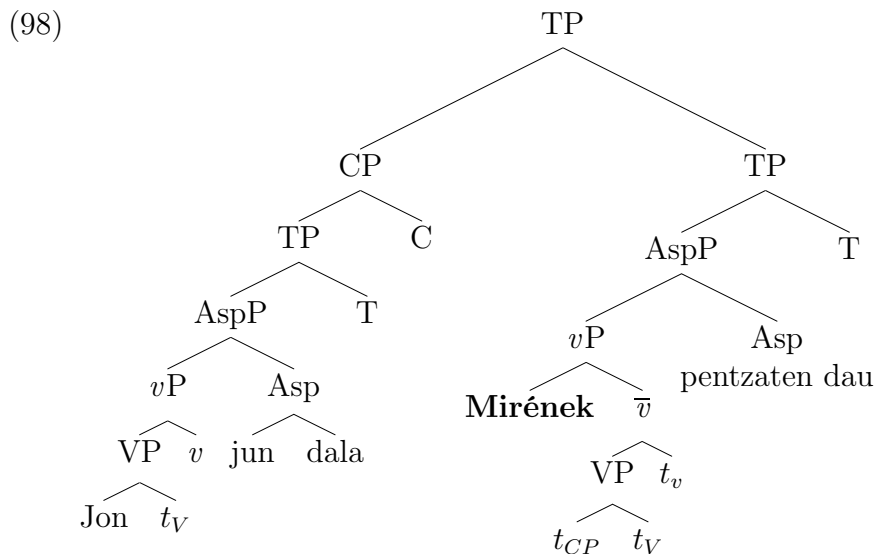


In the structure given, the NP *aman* within the subject is the most deeply embedded constituent. However, since the internal structure of DPs is irrelevant, any constituent inside the subject DP is ignored. For the purposes of the NSR, the subject counts as a single unit. Taking this into account, the most deeply embedded constituent accessible to the NSR is the object *Jon*, which, in fact, has sentence stress.

Even though the Basque data discussed so far are compatible with the generalization about depth of embedding, the English evidence presented in §3 is sufficient to reject it. However, it would be interesting to see whether there is any evidence from Basque bearing on this. The following is a relevant example:

- (97) [Jon jun dala]                      **Mirének** *t* pentzaten dau.  
 Jon go.PRF Aux.PR.COMP Miren.E      think.IMP Aux.PR  
*That Jon has left, Miren thinks.*

What is crucial about this example is that one of the arguments is a clause. Unlike DPs, the internal structure of clauses is visible to the NSR. As shown below, *Jon*, the object of the embedded clause, is the most deeply embedded constituent in the matrix sentence:



However, it is not the constituent with sentence stress. Since the internal structure of clauses is accessible to the NSR, this is a clear case in which the most deeply embedded constituent is not the one with sentence stress. In the version of the NSR

adopted here, the correct prediction is made. The embedded clause is adjoined to TP. Since it is the sister of a branching head (TP), the latter is more prominent than the former. The result, as desired, is that sentence stress is on the subject of the matrix clause, *Mirenek*.

To conclude, depth of embedding is not relevant in the computation of sentence stress. Although many Basque sentences are compatible with the generalization that sentence stress is on the most deeply embedded constituent, there are certain crucial cases that show that this generalization is wrong. This lends further support to the version of the NSR proposed in this thesis.

## 4.9 Conclusion

In this chapter, I have provided further evidence for the NSR proposed in this thesis, by arguing that it makes correct predictions about the placement of sentence stress in Ondarroa Basque. The predictions of the analysis have been further confirmed by the interaction of the NSR and left and right dislocation in Basque. A crucial hypothesis of the present analysis is that phrases appearing to the right of the verbal complex are right dislocated. As we saw in §4.6, this hypothesis allows us to maintain the same NSR for both English and Basque. If phrases appearing to the right of the verbal complex were analyzed in different terms (i.e. leftward movement of the verbal complex), we would be forced to adopt a language-particular version of the NSR based on linear order. As we saw in that section, this version of the NSR would simply describe the facts. In the version proposed here, the facts are explained in terms of independently motivated properties of Basque syntax.

I have also argued that certain properties of the accentual system of Ondarroa Basque motivate a principle which states that certain parts of the structure are invisible to the NSR. Furthermore, I have also argued that this restriction does not hold only for Basque. Both English and Spanish have similar restrictions. What varies from language to language is the specific part of the structure within which the NSR does not apply.

**\*\*DRAFT\*\***

March 13, 2003