

THE BASQUE AUXILIARY VERB: MORPHOSYNTACTIC ANALYSIS AND
IMPLICATIONS FOR SECOND LANGUAGE ACQUISITION

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ABSTRACT

This dissertation presents a morphosyntactic analysis of the Basque auxiliary verb (AUX) and Case system. Based on this analysis, predictions for the trajectory of acquisition of AUX and Case marking by Spanish-speaking adult learners were generated and tested in a pilot study. Findings provide a solid foundation for future research, particularly into the impact of age of initial exposure to Basque.

AUX is a highly complex, multi-morphemic structure that includes clitics doubling the subject, direct object, and indirect object arguments. The distribution of these clitics is claimed to be further restricted by their featural content and the arguments with which they co-occur (Arregi & Nevins, 2012). The patterning of doubled clitics in Basque proves a challenge to many analyses of this phenomenon (e.g., Jaeggli, 1992; Roberts, 2010; Sportiche, 1996; Suñer, 1988; Uriagereka, 1995). Further, current analyses of clitic doubling in Basque (Arregi & Nevins, 2012) are predicated on questionable assumptions about underlying syntactic structure. The analysis here extends the M-merger approach to clitic doubling (Harizanov, 2014; Kramer, 2014) to the Basque data, suggesting further restrictions and modifications to this operation. In the course of providing an account for doubled clitics, this dissertation reviews proposals on multiple aspects of Basque clause structure and Case assignment (e.g., Arregi & Nevins, 2012; Laka, 2006a, 2006b; Preminger, 2011, 2012; Rezac, Albizu, & Etxepare, 2014; Rezac, 2008a, 2008b),

and synthesizes these accounts to offer a cohesive view of the syntactic and morphological derivation of AUX.

The dissertation then turns to the potential for second language (L2) learners to acquire the Basque AUX and Case system, noting that inflectional morphology is a well-known challenge for L2 learners (Hopp, 2009; Lardiere, 2007; White, 2003, among others). A pilot study was conducted with native speakers, speakers who acquired Basque in early childhood, and L2 learners, which provides a strong basis for continued investigation. Issues to be pursued further include the impact of age of first exposure to Basque, whether nativelike performance can be achieved by individual adult L2 learners, and if the challenge in AUX and Case marking production lies in the syntactic domain or in the morphology.

TO CARL

It's all right when you're around, rain or shine.

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CHAPTER 1: Introduction

This dissertation examines the syntactic and morphological structure underlying the Case system and auxiliary verb (AUX) of Basque, a non-Indo-European language spoken in a small region of the Pyrenees that spans across the borders of Spain and France. The AUX consists of a concatenation of morphemes that, in addition to expressing tense, show agreement with various arguments of the sentences in which they appear. This can be seen in (1).¹

- (1) a. Ni- \emptyset erori n-aiz
I-ABS fallen 1S.ABS-be.1S
'I have fallen'

(Laka, 1996, p. 6.1.2.1:(#35))

- b. Ni-k zu- \emptyset ikusi z-aitu-t
I-ERG you-ABS seen 2S.ABS-have.2S-1S.ERG
'I have seen you'

- c. Zu-k ni-ri liburua- \emptyset saldu d-i-da-zu
You-ERG me-DAT book.the-ABS sold ABS-have.3S-1S.DAT-2S.ERG
'You have sold the book to me'

The data in (1) show that Basque has an ergative-absolutive (ERG-ABS) Case system, in which the subject of unaccusative intransitive clauses and the direct object of (di)transitive clauses are marked with ABS Case ($/\emptyset/$), while the subject of (di)transitive clauses bears ERG Case ($/k/$).

The indirect object is marked with dative (DAT) Case ($/ri/$). AUX, seen in (1) in sentence-final position, includes morphemes representing the features of the ABS, ERG, and DAT arguments;

the second-position morpheme of AUX, which I refer to as the 'anchor'², also reflects the features of the ABS argument.

¹ Unless otherwise cited, all Basque examples are from original fieldwork. Many sincere thanks to my informants, and any misinterpretations of their judgments are my responsibility.

² The core of AUX has also been referred to as the 'root' (Arregi & Nevins, 2012), but I move away from this term to avoid confusion with the notion of the Root as used in Distributed

Even simple clauses in Basque like those in (1) involve numerous underlying syntactic relationships to account for Case-marking patterns and the agreement morphology on AUX. The derivation of the ABS, ERG, and DAT morphemes on AUX are at the center of the analysis promoted in this dissertation. Specifically, I suggest that these morphemes are best characterized as doubled clitics. This is not a new analysis of these morphemes (see Arregi & Nevins, 2012); however, as will be shown in Chapter 4, many previous accounts of clitic doubling do not sufficiently account for the patterns observed in Basque in a theoretically adequate way. Thus, this dissertation extends to Basque a recent and cross-linguistically viable account of clitic doubling: the M-merger analysis (Harizanov, 2014; Kramer, 2014). In order to account for language-specific factors, including Case assignment and Person-Case Constraint (PCC) effects, I propose certain modifications, which serve to further develop the M-merger analysis by suggesting limitations on the power of the operation. Further cross-linguistic application of the M-merger approach to clitic doubling will determine whether these modifications are universal or language-specific limitations on this operation.

The M-merger approach to clitic doubling requires the establishment of certain underlying syntactic relationships. In order for this analysis to be viable, it must show to be compatible with underlying clausal structure. Therefore, this dissertation offers a view of simple clause structure in Basque developed by synthesis of numerous previous analyses (Adger & Harbour, 2007; Arregi & Nevins, 2012; Laka, 2006a; Preminger, 2012, 2014; Rezac, et al., 2014; Rezac, 2008a). As will be discussed in Chapters 2 – 5, there are numerous exceptional characteristics of Basque (e.g., intransitive unergatives, PCC effects, paradigmatic gaps) that have historically shown to be a challenge for linguistic analysis. The works reviewed here offer

Morphology (Halle & Marantz, 1994). Many thanks to members of the Georgetown University Morphosyntax seminar for helping with the term ‘anchor’.

contrasting analyses of the underlying structure of this language, each accounting for a subset of data. The purpose of the review here is to synthesize these works and offer a complete derivation of simple clause structure that accounts for as much data as possible. This review, specifically focused on Case assignment and agreement patterns, is offered in Chapter 3. This integrated analysis provides the foundation for the application and subsequent modification of the M-merger analysis of clitic doubling.

The syntactic structure generated by the analyses of Chapters 3 and 4 does not entirely capture observed surface forms of AUX, however. Thus, Chapter 5 offers a post-syntactic analysis to derive the surface forms. The analysis in this chapter slightly modifies that of Arregi & Nevins (2012), demonstrating the cross-dialectal adequacy of the very detailed and thorough analysis offered by the authors. From a broader perspective, Chapter 5 considers how operations are initialized in the Distributed Morphology (DM) framework (Halle & Marantz, 1993, 1994), and offers a generalized implementation procedure for post-syntactic operations.

Finally, this dissertation addresses another aspect of the Case and AUX systems of Basque: their acquisition by second language (L2) learners. Although the acquisition of Basque as a first language (L1) has been studied (e.g., Austin, 2007, 2012; Ezeizabarrena & Larrañaga, 1996; Ezeizabarrena, 2012; Meisel & Ezeizabarrena, 1996), comparatively little has been done with L2 Basque. The majority of L2 Basque studies focus on the processing of the language (e.g., Erdocia, Zawiszewski, & Laka, 2014; Zawiszewski, et al., 2011), there is only one study that approaches L2 Basque from the generativist perspective (Rodríguez-Ordóñez, to appear), which is concerned with the underlying representations developed by language learners. Thus, taking the underlying representations developed in Chapter 3-5 as its basis, Chapter 6 considers possible outcomes for L2 acquisition of Basque based on competing generativist second

language acquisition (SLA) theories. Chapter 7 tests these predictions, presenting the results of an original pilot study comparing behavior of Basque native speakers (NS), early-acquiring learners (following Rodríguez-Ordóñez, ‘early sequential bilinguals’ (ESB)), and L2 learners. The scope of this pilot study is broad and the participant groups are small, but the results motivate a future research agenda in Basque SLA.

To summarize, the dissertation proceeds as follows. Chapter 2 offers a syntactic background of basic Basque clause structure; Chapter 3 builds on this foundation by assessing various proposals for Case assignment and underlying agreement in the language. Chapter 4 introduces numerous theories of clitic doubling and demonstrates the challenge that Basque poses for each, before presenting the M-merger approach and discussing modifications necessary for this analysis to hold in Basque. Chapter 5 finalizes the derivation by reviewing the post-syntactic processes advocated by Arregi & Nevins (2012) and adapting them as needed to account for the standard Basque dialect; this chapter also suggests a generalized procedure for DM analyses. Chapter 6 turns to SLA, offering views of the challenge that Basque poses for L2 learners based on the few studies of this particular language, in addition to the findings of similar grammatical constructs in other languages. Chapter 7 presents a pilot study on the acquisition of the Basque Case system and AUX, and introduces a future a substantial agenda for future research in this vein. Chapter 8 concludes.

The remainder of this chapter proceeds as follows. Section 1 introduces basic facts of the Basque language, which will be accounted for in the theoretical analyses to follow. Section 2 briefly introduces the Minimalist framework adopted in the syntactic analyses. Section 3 introduces the DM framework adopted in morphological analyses.

1 Facts of Basque

As of a 2006 survey, there are approximately 665,750 speakers of Basque (*Euskara*) in the region known as the Basque Country, or the Basque Autonomous Community (BAC), the majority of whom are active or balanced Spanish-Basque bilinguals (Arregi & Nevins, 2012).³ There are seven provinces in the Basque region, each with a dialect of its own (roughly); thus, dialectal variation is a serious consideration here. Following Arregi & Nevins (2012), the dialects of Basque (and their provinces of origin) include Biscayan (Biscay), Guipuscoan (Guipuscoa), High Navarrese (Navarre), Labourdin (Labourd), Low Navarrese (Low Navarre), and Souletin (Soule).⁴

The standard variety of the Basque language is *Batua*; it was created by the Basque Academy in the late 1960s to encourage revitalization and unification of the language (de Rijk, 2008), which had suffered in the tumultuous political climate of Spain earlier in the 20th century (Hualde & Ortiz de Urbina, 2003). The standard draws heavily on the Guipuscoan dialect, but incorporates features of a number of other Basque dialects. *Batua* is widely used in published written material, both by the Autonomous Basque government and on public Basque-language television. The dialect of Basque to be used in experimental material in this project is *Batua*, based on the dialect used in classroom resources. The majority of the data discussed here come from *Batua*; data from other dialects are marked when included.

This section introduces the basic facts underlying the syntactic and morphological analyses presented in Chapters 2-5. Section 1.1 introduces the canonical word order of a Basque sentence, showing AUX in context. Section 1.2 shows the construction of AUX, presenting the

³ http://www1.euskadi.net/euskara_adierazleak/zerrenda.apl?hizk=i&gaia=25

⁴ Of course, there is a good deal of language contact between dialects across provincial boundaries.

numerous morphemes from which AUX is composed, and showing the relationship between these morphemes and sentential arguments. Section 1.3 presents patterns of Case marking on DP arguments in Basque. Section 1.4 briefly addresses the ongoing revitalization efforts in the BAC, with specific attention to early education; this is critical to the characterization of speakers and learners who participated in the pilot study.

1.1 Canonical word order in Basque

Basque is a subject-object-verb (SOV) language that allows relatively flexible word order. Canonical word order in intransitive, transitive, and ditransitive sentences are observed in (1) above and in (2) below.

- (2)
- a. umea- \emptyset kal-ean eror-i da
 child.the-ABS street-in fall-PERF AUX
 ‘The child has fallen in the street’

 - b. emakumea-k gizona- \emptyset ikus-i du
 woman.the-ERG man.the-ABS see-PERF AUX
 ‘The woman has seen the man’

 - c. gizona-k umea-ri liburua- \emptyset ema-n dio
 man.the-ERG child.the-DAT book.the-ABS give-PERF AUX
 ‘The man has given the book to the child’

(Laka, 1996, 2.0.1a–c)

As seen in (2), the canonical order of arguments in Basque is subject, indirect object, direct object, with AUX appearing in sentence-final position following the main verb.

There are three additional features to be noted from these examples. First, the form of AUX changes based on the arguments of the sentence; second, the AUX root morpheme changes for each example in (2). Although it shows agreement with the 3rd Person singular ABS argument in all examples, in the intransitive, it is *-a*, becoming *-u* in the transitive and *-o* in the ditransitive. This is due to the fact that different verbs serve as the root for AUX depending on

sentential arguments. Both of these attributes are discussed in Section 1.2 below. Finally, Basque has overt case marking on nouns (e.g., *-k*, *-ri*). More details on the Basque case system are given in Section 1.3.

Before continuing, it should be noted that Basque allows pervasive scrambling, as shown in (3).

- (3) a. emakumea-k gizona-ø ikusi du gaur
woman-ERG man-ABS seen AUX today
'The woman has seen the man today'
- b. gizona ikusi du gaur emakumeak
- c. gizona ikusi du emakumeak gaur
- d. gaur ikusi du emakumeak gizona
- e. gaur ikusi du gizona emakumeak
- f. emakumeak ikusi du gizona gaur
- g. emakumeak ikusi du gaur gizona
- h. gizona emakumeak ikusi du gaur
- i. gizona gaur ikusi du emakumeak
- j. gaur gizona emakumeak ikusi du
- k. ikusi du emakumeak gizona gaur

(Erdocia, et al., 2009, p. 3:(#1))

In the examples and experimental stimuli here, I focus on sentences with canonical word order. I assume free word order is not base-generated but that arguments begin in canonical position and can enter into syntactic relations prior to scrambling.

1.2 Basque Finite Auxiliary Paradigms

In many languages (e.g., English, Spanish), the subject of a sentence alone controls the agreement features that appear on the target verb. These features can appear as a bound morpheme on the verb (e.g., English 3rd Person singular *-s*) or can impact the form of the verb with no discernible morpheme boundary (e.g., English 1st Person singular copula *am*). In Basque, the AUX carries not only a bound morpheme with the features of the subject, but bound morphemes with the features of the direct and indirect object as well; these are the morphemes being analyzed here as doubled clitics. Additionally, the features of the ABS argument influence the form of the root verb.

There are two different verbs underlying AUX forms: *izan* ‘to be’, and *edun* ‘to have’. More accurately, the roots are claimed to be ‘traced back’ to *izan* and *edun*, historically. AUX is not used in the infinitive, so there are no instances in which either of these forms appears in its bare infinitival form without Tense and ABS Phi feature agreement. Laka (1996) notes that *edun* is actually an extinct historical form of ‘to have’; the modern verb ‘to have’ is *ukan*. However, whether the root verb is understood to be *edun* (de Rijk, 2008; Hualde & Ortiz de Urbina, 2003) or *ukan* (Laka, 1996), a comparison of these authors’ discussion shows the AUX paradigm forms remain the same. I follow the majority here and refer to the (di)transitive AUX root verb as *edun*. The appearance of *izan* versus *edun* AUX forms is attributed to the doubled clitics appearing on the AUX form (Arregi, 2004), with *edun* appearing in the presence of an ERG doubled clitic. At first glance this might seem to correlate directly with valency: unaccusative intransitives like (1a) and (2a) lack ERG clitics and are therefore *izan* forms; (2b) and (2c) have ERG clitics and are therefore *edun* forms. However, there are some morphosyntactic phenomena that result in the appearance of AUX clitics that do not seem to correspond to a Case-matched sentential

argument. These cases suggest that it is not valency but clitic environment that conditions the selection of *izan* or *edun* as the anchor form. For ease of discussion, since the data under consideration here is fairly straightforward, I refer to AUX as ‘intransitive’, ‘transitive’, and so forth, until the clitic-based distinction becomes relevant (Chapter 5).

Tense also impacts the form of the AUX root; the paradigms here are limited to present tense AUX forms, as these are the forms that will be investigated in this dissertation. A full breakdown of morphemic structure in AUX is given in Chapters 2 and 5; below, I present full AUX forms without showing morpheme boundaries. Table 1 below shows the full present-tense paradigm for the intransitive AUX. Note that the inflectional features correspond to the ABS (subject) argument only.

Table 1. Full present tense intransitive AUX paradigm: *izan* ‘to be’

	SG	PL
1	naiz	gara
2	zara	zarate
3	da	dira

(de Rijk, 2008, p. 122)

Table 2 introduces the AUX forms used in transitive clauses. Here, AUX is influenced by the ERG subject and the ABS direct object. Note that no AUX is available when the Person features of the two arguments match, except in 3rd Person contexts. This is addressed in Chapter 5.

Table 2. Full present tense transitive AUX paradigm: *edun* ‘to have’

ERGATIVE (Subject)	ABSOLUTE (Direct Object)					
	1.SG	2.SG	3.SG	1.PL	2.PL	3.PL
1.SG		zaitut	dut		zaituztet	ditut
2.SG	nauzu		duzu	gaituzu		dituzu
3.SG	nau	zaitu	du	gaitu	zaituzte	ditu
1.PL		zaitugu	dugu		zaituztegu	ditugu
2.PL	nauzue		duzue	gaituzue		dituzue
3.PL	naute	zaituzte	dute	gaituzte	zaituztete	dituzte

(de Rijk, 2008, pp. 195–6)

Finally, Table 3 shows the ditransitive paradigm. Here, all three arguments (ABS, ERG, and DAT) influence the form of AUX. Due to Person Case Constraint (PCC) effects, only 3rd Person arguments are observed in ditransitives; the paradigm here is limited to 3rd Person singular ABS arguments for brevity's sake. Should the ABS argument appear in the plural form, the anchor morpheme /i/ surfaces as /izki/. As in Table 2, note that no AUX form is available when the Person features of the ERG and DAT match, except in 3rd Person contexts.

Table 3. 3.SG.ABS present-tense ditransitive auxiliary paradigm: edun ‘to have’

<i>ABSOLUTE (Direct Object) = 3.SG</i>							
ERGATIVE (Subject)	DATIVE (Indirect Object)						
		1.SG	2.SG	3.SG	1.PL	2.PL	3.PL
	1.SG		dizut	diot		dizuet	diet
	2.SG	didazu		diozu	diguzu		diezu
	3.SG	dit	dizu	dio	digu	dizue	die
	1.PL		dizugu	diogu		diezuegu	diegu
	2.PL	didazue		diozue	diguzue		diezue
	3.PL	didate	dizute	diote	digute	dizuete	diete

(de Rijk, 2008, pp. 350–1)

Further breakdown of the forms in these paradigms, as well as paradigms for other relevant argument combinations, will be presented in the following chapters.

1.3 Case marking on DP arguments

Both full and pronominal DPs in Basque are marked with suffixes for case, as seen in (1) and (2). The ABS case marker is null, while the ERG and DAT morphemes each have two phonologically conditioned allomorphs (Laka, 1996); these forms are shown in Table 4.

Table 4. Allomorphs of Case makers

Case	Allomorphs
ABS	-∅
ERG	-k; -ek (C+___)
DAT	-i; -ri (V+___)

ERG and DAT Case markers further reflect the Number feature of the argument they represent, as shown in (4).

- | | | | | |
|-----|----|--|-----|---|
| (4) | a. | ume-a- \emptyset
child-the-ABS(S) | vs. | ume-ak- \emptyset
children-the(P)-ABS(P) |
| | b. | ume-a-k
child-the-ERG(S) | vs. | ume-ek
children-the.ERG(P) |
| | d. | ume-a-ri
child-the-DAT(S) | vs. | ume-ei
children-the.DAT(P) |

In (4), the plural features is reflected on the ERG Case marker /ek/ and the DAT Case marker /ei/.

In more complex DPs, case endings affix to the final word of a phrase, as shown in (5).

- | | | |
|-----|----|---|
| (5) | a. | [haur txikia]- <u>k</u> igela- \emptyset ikusi du
[baby small]- <u>ERG</u> frog-ABS seen AUX
'The small baby has seen the frog' |
| | b. | *[haurra- <u>k</u> txikia] igela- \emptyset ikusi du
[baby- <u>ERG</u> small] frog-ABS seen AUX |
| | c. | Joseba-k [haur txikia]- <u>ri</u> igela- \emptyset eman dio
Joseba-ERG [baby small]- <u>DAT</u> frog-ABS give AUX
'Joseba has given a frog to the small baby' |
| | d. | *Joseba-k [haurra- <u>ri</u> txikia] igela- \emptyset eman d-i-o- \emptyset
Joseba-ERG [baby- <u>DAT</u> small] frog-ABS give AUX |

The examples in (5a) and (5c) show that when a DP argument is modified by a post-nominal adjective, the ERG or DAT case marker appears not on the head noun but on the last word in the phrase (the adjective). For the ERG or DAT case marker to appear on the head noun (DP-internally) is ungrammatical, as seen in (5b) and (5d).

Although Basque allows pro-drop, when pronouns appear in argument positions they are marked with case suffixes. The full range of case-marked pronouns is given in Table 5. For 3rd

Person pronouns, Basque uses a complex system of demonstratives in lieu of dedicated 3rd

Person pronouns; these are excluded from the Table below.

Table 5. Case-marked Basque pronouns

	ABS	ERG	DAT
1.SG	ni	ni-k	ni-ri
2.SG	zu	zu-k	zu-ri
1.PL	gu	gu-k	gu-ri
2.PL	zuek	zuek	zue-i

(de Rijk, 2008, p. 113)

The forms in Table 5 show that the case endings for DPs are, on the whole, generalizable to pronouns. The 2nd Person plural form is an outlier, showing syncretism between the ABS and ERG and violating the phonological rule conditioning DAT case allomorphs (*zuek-ri). The syncretism may be attributed to the fact that the plural marker in Basque is *-(a)k*; thus, the presence of *-k* on the ABS pronoun indicates that it is composed of the 2nd Person singular pronoun affixed with a plural marker. The morpheme *-(e)k* is not repeated in ERG (*zuek-ek).

1.4 Basque revitalization and early sequential bilingualism

In Spain, where most Basque speakers are found, Basque is a minority language, spoken in addition to Spanish (Cenoz, 2009). Efforts to suppress the use of Basque in the 20th century reduced the overall number of speakers, and consequently the ability of generations of speakers to pass the language along to their children. Thus, what constitutes a ‘native speaker’ of Basque is complex.

My work with Basque speakers suggests that there are two categories into which those who consider themselves ‘native speakers’ fall: first, there is a group who report learning Basque from birth, with parents who speak Basque at home. Second, there is a group who report learning Basque from age 2-3, with parents who speak Spanish at home. As (young) adults, these speakers report similar language use habits – they speak Basque regularly with friends and

siblings, and report using the language every day. This reported language use is based on responses of speakers who participated in the pilot study; these patterns do not necessarily hold for all Basque speakers. Cenoz (2009) and Rodríguez-Ordóñez (to appear) both report that the overall use of Basque in different regions differs, which of course impacts speakers' ability to use the language in day-to-day tasks.

Further, despite reported similarities in use, the initial exposure of these two groups differs. For the age-0 speakers, Basque is the language spoken at home with Spanish learned either simultaneously or later in school; for the age-2 speakers, Spanish is the home language, with initial Basque exposure coming in preschool. By some estimates, based on the number of factors that can be considered in terms of early language exposure, there are over 250 possible types of bilingual educational experience (Cenoz, 2009, p. 25). To fully account for the range of possible linguistic experiences is beyond the scope of the current discussion. Acknowledging the broad and fascinating sociolinguistic challenge that Basque poses for in terms of bilingualism, multilingualism, and heritage language learning, the remainder of this section focuses on the bilingual education of early-acquiring (2-3-year-old) L2 Basque learners.

First, it is important to note that although compulsory education begins at age 6, it is more common for children in the BAC to begin schooling around age 2 (Cenoz, 2009, p. 48). Thus, at this age children can be considered to be reliably exposed to both Basque and Spanish, if they were not in their home. The reason this can be assumed is because bilingualism/multilingualism is a prominent feature of the school system in the region, with both Basque and Spanish being compulsory instructional subjects (Cenoz, 2009, pp. 49–50).

There are three models for bilingual education in schools in the BAC: Model A, Model B, and Model D. Features of these models are summarized in Table 6.

Table 6. Models of bilingual education in the BAC (Cenoz, 2009)

Model	Primary Student L1	Primary instructional language	Instructional language usage
Model A	L1 Spanish	Spanish instruction	Basque: 15% Spanish: 85%
Model B	L1 Spanish	Basque/Spanish instruction	Basque: 50% Spanish: 50%
Model D	L1 Basque (some L1 Spanish)	Basque instruction	Basque: 75% Spanish/L3 (e.g., English): 25%

As seen in Table 6, bilingual education encompasses a broad range of experiences, nor is the description here completely exhaustive. Cenoz (2009) notes further variation between schools based on the use of English as a language of instruction, the introduction of other foreign languages, the use of Basque as a language of instruction for different subjects, teacher training, bureaucratic linguistic environment, and additional sociolinguistic factors (e.g., inter-student communication). The models in Table 6 apply broadly to both primary and secondary schools. Regarding early-acquiring speakers who began using Basque between ages 2-3, Cenoz (2009, p. 192) notes that the majority of pre-primary education follows Models B and D, with Basque constituting at least half of the instructional input for up to 95 percent of pre-primary children.

In summary, the characterization of native and early-acquiring speakers of Basque is complex, significantly influenced by both home environment and the model of school attended. SLA studies on Basque do tend not to offer great detail on the model of education at the pre-primary level, presumably as speakers' recollection of these experiences is not entirely reliable. Following the example of such studies (Rodríguez-Ordóñez, to appear; Zawiszewski et al., 2011), I rely on participants' reported age of acquisition (AoA) to delineate between groups, with 'native speakers' (NS) being those who acquired Basque beginning in the home from birth, and 'early sequential bilinguals' (ESB) being those who acquired Basque in a pre-primary school context with Spanish as the home language.

Sections 1.1-1.3 have offered descriptive background information about sentence structure, AUX forms, and Case marking needed to begin the analyses presented here. These facts are analyzed and expanded upon in Chapters 2-5. Section 1.4 offered a brief discussion of the ongoing revitalization efforts in the BAC, and the impact that this has on the participants of the pilot study. I now turn to the theoretical linguistic frameworks adopted in the following chapters.

2 Syntactic framework: The Minimalist Program

This section offers a brief introduction to the relevant aspects of the Minimalist approach to syntactic analysis, the framework that will be adopted for the present analysis. Specifically, I focus on the operation Agree, which underlies AUX agreement and many instances of Case assignment. In this framework, syntactic structures are built from the bottom up via the operation Merge, which combines two elements to form a new syntactic unit (Chomsky, 1995, p. 227). Merge can apply to items drawn from the lexical array or alternatively can act on an element already in the derivation.

All syntactic elements (both lexical and functional) contain a set of features. In Minimalism, there are two types of feature – *interpretable* features (represented [F] or [iF]) and *uninterpretable* features (represented [uF]). Interpretable features are those that correlate to some semantic or grammatical property (e.g., Number or Gender) of the lexical item in which they appear. For example, a pronominal DP (e.g., 1st Person singular *ni* ‘I’ in Basque) communicates how many entities are being represented (Number) and their role in discourse (Person).⁵

Uninterpretable features, by contrast, “are purely formal in nature: their ‘job’ is to establish

⁵ It is noteworthy that while Gender features in a pronoun may in fact reference the (semantically interpretable) biological sex of the referent, this is not always the case as Gender is a grammatical property assigned to lexical items that do not have biological sex and thus is not semantically interpretable.

syntactic dependencies” (Adger, 2006, p. 508); for example, features on functional heads that lead to agreement of AUX (e.g., 1st Person singular AUX, *naiz* ‘am’, in Basque) are not semantic features of the verb but rather show the relation of the verb to the argument that bears those interpretable features. This dependency is accomplished through the operation Agree.

Agree is an operation that creates a syntactic dependency. It involves two syntactic elements—a Probe and a Goal (Chomsky, 2000). An acceptable Probe/Goal pair will have (some of) the same features; these features are uninterpretable on the Probe, but interpretable on the Goal. When Merged into the derivation, the Probe searches for the first element whose interpretable features match its own uninterpretable features. If the uninterpretable features of the Probe all match the interpretable features of the Goal, then the two elements are in an Agree relation. The Probe’s uninterpretable features are valued, and the derivation proceeds. If the uninterpretable features of the Probe are not all valued by the interpretable features of the Goal, Agree is not established and the Probe continues to look down for a suitable Goal. To clarify, the uninterpretable features of the Probe must be equal to or a subset of the interpretable features of the Goal.

If the features of the Probe do not match those of the Goal, or if they are a superset of those of the Goal, Agree fails to arise. In the case that the Probe has searched its entire domain and still cannot find an acceptable Goal, there are two possible outcomes. The traditional Minimalist position is that the derivation crashes at this point and cannot continue. Alternatively, the uninterpretable features of the Probe could receive default valuation (for many languages, 3rd Person singular) and the derivation can proceed (Preminger, 2014).

The Agree relation is domain-specific; a Probe cannot search endlessly for a suitable Goal. Thus, Agree is subject to Phase boundaries (Chomsky, 2000, 2001). A Phase is a

subsection of a derivation whose boundaries correspond to the functional category CP or vP (and possibly DP) that serves as a “checkpoint” to ensure that the derivation is valid so far. After a Phase boundary is reached, everything below the head and specifier (Spec) of the boundary is “shipped off” and is inaccessible for the rest of the derivation. Thus, a Probe can look for a Goal in the Phase it Merges in (or the head and Spec of the Phase immediately lower). Thus, following the Minimalist Program, an Agree relation within a Phase (or with the head or Spec of the Phase immediately below) arises as a matching of interpretable and uninterpretable features between a Probe and Goal.

Finally, in addition to valuing the uninterpretable features of the Probe, Agree can also result in the valuation of unvalued, uninterpretable features on the Goal. Most commonly on DP Goals this is a Case feature. Thus, most instances of Case assignment are considered structural, or arising as a result of Agree between a functional head (usually v or T) and a DP. This is not to say that all instances of Case assignment result from Agree, or that v and T always assign Case. However, Case is understood to be a fairly standard reflex of Agree.

This section has offered a very brief overview of the Agree operation in Minimalism. As will be discussed in Chapter 2-4, this operation and the functional head/DP relationship it produces underlies the structure of AUX and the assignment of Case in Basque.

3 Post-syntactic framework: Distributed Morphology

This project adopts the Distributed Morphology (DM) framework (Embick & Noyer, 2007; Halle & Marantz, 1993, 1994; Harley & Noyer, 1999). The approach diverges from previous generativist approaches to morphology most strikingly in the abandonment of the Lexicon. In classic Chomskian Y-model grammars (e.g., Chomsky, 1981, 1995), the Lexicon is a storehouse of word information, including the phonological form of the word, its morphological

properties, syntactic restrictions, meaning, and non-canonical uses. The Lexicon is positioned above the syntax and feeds lexical items into the subsequent derivation. Thus, a lexical item enters the syntactic derivation toting along information (e.g., phonological forms) irrelevant to the syntactic component of the grammar.

While DM does not dispense with the Y-model of grammar in which the syntax feeds the PF module for phonological interpretation and the LF module for semantic interpretation, it does remove the lexicon from their derivational processes, “distributing” the tasks throughout the modules. The information in a lexical entry is separated into three lists, each of which is associated with a module of the grammar. Accessible to the syntax is list A, or the Narrow Lexicon (Marantz, 1998), which contains acategorical word roots and abstract features, e.g., case, category, and Phi features. At this point, these features are bundled into sets lacking phonological representation; the bundles alone appear in the terminal nodes of the syntactic structure.⁶ It is compatible with the assumptions that the syntactic derivation that houses these feature bundles proceeds as proposed in the Minimalist Program.

Post-syntactically, the derivation is sent to PF where it undergoes morphological operations (e.g., Linearization, Fission) (Harley & Noyer, 1999), which manipulate morphemic structure prior to the insertion of phonological forms (Late Insertion). After these post-syntactic operations on abstract feature bundles, the derivation undergoes Vocabulary Insertion.

Vocabulary Insertion is the association of an abstract feature bundle with a phonological output; the element inserted is part of list B, the Vocabulary (Marantz, 1998). Elements of list B are termed Vocabulary Items (VIs). A VI is not an atomic unit but a relationship between a set of

⁶ Marantz (1998) does not definitively say that roots do not come from the Narrow Lexicon with their phonological form, but it is generally thought that roots in the syntax contain an index pointing to their phonological form realized at PF (Embick, 2000). The discussion at hand is not contingent upon this point.

features and a phonological output (Harley & Noyer, 1999); the VI does not add any syntactic or semantic information but rather provides a pronunciation for a morpheme already present in the syntactic structure.

Relevant to the process of Vocabulary Insertion is the principle of Underspecification, which refers to the makeup of the feature bundles of a VI. The feature bundles in terminal nodes throughout the syntax (morphemes) do not have a phonological realization; this comes from the VI. Consequently, Vocabulary Insertion requires a correlation between the features of the fully specified morpheme and those in the VI (that is, the features need to be matched). For a given morpheme, there may be multiple VIs that represent subsets of its features. The ‘best match’ is determined by the *Subset Principle*, which states:

The phonological exponent of a Vocabulary Item is inserted into a position if the item matches all or a subset of the features specified in that position. Insertion does not take place if the Vocabulary Item contains features not present in the morpheme. Where several Vocabulary Items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen.

(Halle, 1997, p. 428:(#7))

After the ‘best match’ is inserted, the derivation undergoes phonological processes.

Following operations in the phonology, the PF derivation is coupled with a concurrently produced derivation from LF using a module called the Encyclopedia; the integration of the semantic component in the DM framework is controversial, but contains non-linguistic (i.e., real-world semantic) knowledge that assigns referents (Harley & Noyer, 1999).

This section has offered a brief overview of the DM framework adopted in this project, with the goal of introducing concepts and terms that will be relevant throughout the analysis as a whole. The morphological analysis of AUX presented in Chapter 5 offers a suggested implementation procedure for DM derivations, seeking to formalize how structures that undergo

morphological operations are identified, how specific repairs are implemented, and the relationship between modified post-syntactic structures and other morphological constraints.

This chapter has introduced the goal of this dissertation, which is to offer a satisfactory analysis for clitic doubling in Basque. In so doing, a synthesis of previous analyses of various aspects of Basque is offered. Upon providing a syntactic analysis of Case, the AUX structure, and clitic doubling, attention turns to post-syntactic processes. The discussion here shows the cross-dialectal viability of the approach put forth by Arregi & Nevins (2012), and offers suggestions for operation implementation in DM as a whole. Finally, this dissertation addresses questions of L2 acquisition pertaining to the Basque AUX and Case system, and offers the results of a pilot study that motivates a future research agenda.

This chapter has also offered a brief introduction to the facts of Basque to set up the analyses in coming chapters, as well as introduced some issues pertaining to the identification of native speakers of the language. Brief introductions to the Minimalist and DM frameworks, which are adopted in this analysis, were also offered.

CHAPTER 2: Syntactic Background

This chapter lays out the underlying clause structure assumed in the analyses of the following chapters (Section 1), and offers a preliminary description of the auxiliary (AUX) verb (Section 2). Theoretical assumptions about relevant nominal and verbal features of Basque are presented, along with some restrictions on those features (Section 3).

1 Basic Clause Structure

Four argument structures will be investigated in this project: these include intransitives, transitives, ditransitives, and applicative intransitives (shown in (1), respectively).

- (1) a. umea kal-ean eror-i da
 child.the.ABS street-in fall-PERF be.3S
 ‘The child has fallen in the street’

(Laka, 1996, 2.0.1a)

- b. emakumea-k gizona ikus-i du
 woman.the-ERG man.the.ABS see-PERF has.3SE.3SA
 ‘The woman has seen the man’

(Laka, 1996, 2.0.1b)

- c. gizona-k umea-ri liburua ema-n dio
 man.the-ERG child.the-DAT book.the.ABS give-PERF has.3SE.3SD.3SA
 ‘The man has given the book to the child’

(Laka, 1996, 2.0.1c)

- d. haiek Itxaso-ri gustatzen zazkio
 they.ABS Itxaso-DAT like have.3SE.3SD
 ‘Itxaso likes them’ (Lit: ‘They are pleasing to Itxaso’)

(Rezac, 2008b, p. 63:(#1a))

As discussed in Chapter 1, all of these examples show the Subject-Object-Verb (SOV) word order of Basque, as well as the ergative (ERG)- absolutive (ABS) case marking system. In an ERG-ABS system, subjects of intransitives and direct objects of (di)transitives are marked with

ABS Case, while subjects of (di)transitives bear ERG Case; dative (DAT) appears on indirect objects. This section offers a basic clause structure for each of the argument types seen in (1). Note that these sections do not offer discussions of Case assignment or agreement. These issues are explored fully in Chapters 3 and 4.

1.1 Intransitive clause structure

As shown in (1a) above, basic present perfective intransitive clauses minimally include a subject DP, verb, and AUX. The subject bears ABS Case marking; note that this is not true for all intransitives in Basque, as in (2).

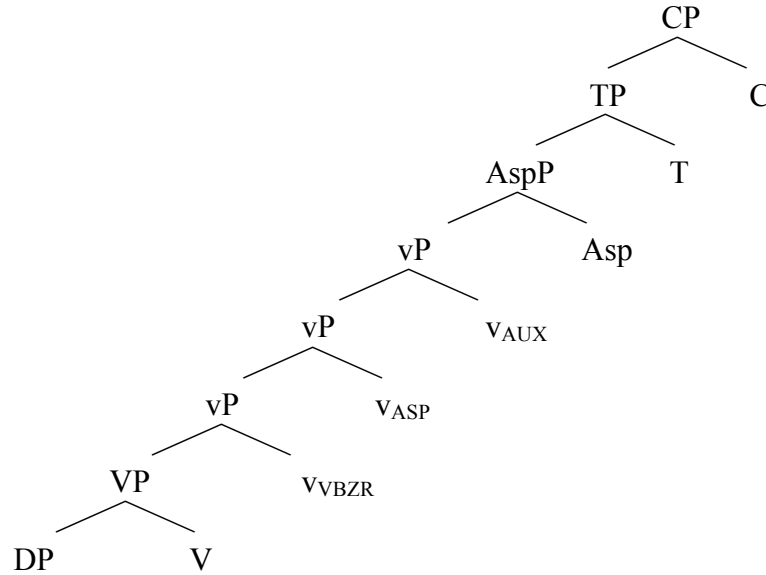
- (2) a. Jon erori da
Jon.ABS fallen be.3S
'Jon has fallen'
- b. Jon-ek korritu du
Jon-ERG run has.3S
'Jon has run'

(Hualde & Ortiz de Urbina, 2003, p. 389:(#585a))

In (2a), the subject *Jon* bears ABS Case marking (which is null), and in (2b) bears the ERG marker *-ek*. Note also that the form of AUX differs. This section discusses unaccusative intransitives with ABS subjects, like (2a); unergatives like (2b) are also argued to be underlyingly intransitive (cf. Preminger, 2012), but this is addressed in Chapter 3.

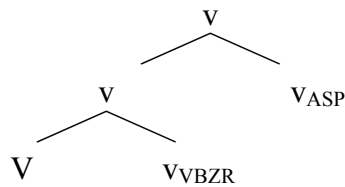
The structure in (3) is proposed for unaccusative intransitives, henceforth simply 'intransitives'.

(3)



In (3), the subject DP Merges in an internal argument position, as the complement of V; VP is selected by vP. The structure of the vP itself is rather complex, including three distinct v heads. The lowest, a v head (v_{VBZR}) ensures the verbal form of the Root introduced by v appears (within the DM framework). Above the v_{VBZR} , the head v_{ASP} introduces the aspectual features observed on the main verb itself. V raises to v_{VBZR} , which raises to v_{ASP} to form the main verb with the structure shown in (4).¹

(4) a.



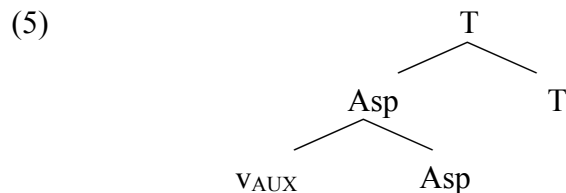
b. eror- \emptyset -i
come-v-PERF

¹ Going forward, v_{VBZR} and v_{ASP} will be omitted for structural clarity unless necessary. Note that these heads are not involved in Case assignment, agreement with DP arguments, or AUX morphology.

The highest v in (3), v_{AUX} , is the head that I suggest is responsible for the assignment of Case to the internal argument, as well as for the generation of much of the AUX morphology. AUX structure is elaborated further below, and the details of this proposal are given in Chapters 3 and 4. I suggest that v_{AUX} Agrees with the internal argument and raises to T, forming the syntactic core, or ‘anchor’ of AUX². In so doing, v_{AUX} necessarily picks up the Asp head intervening between v and T.

Regarding the position of AspP, it could be suggested that this phrase is vP internal (Elordieta, 2001), considering that no aspectual distinctions are manifested on AUX itself, and that aspect morphology appears on the main verb. However, the position of AspP between vP and TP is critical for semantic interpretation. This is because the purpose of Aspect is “to focus a time interval in the time of the event denoted by the VP” (Demirdache & Uribe-Extbarria, 1997, p. 147) with regards to the initial and final points of that event. In comparison, Tense situates the event denoted by the VP to the time of utterance. The structuring of Tense (TP) above Aspect (AspP) allows for the proper compositional semantic interaction (Demirdache & Uribe-Extbarria, 1997).

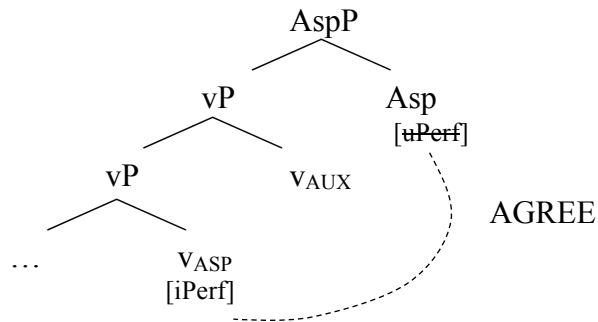
Thus, the suggestion is that in most dialects of Basque, the supra-vP AspP is realized as null, and is incorporated in AUX via head movement of v to T, yielding the structure in (5).



² As mentioned in Chapter 1, the core of AUX has also been referred to as the ‘root’ (Arregi & Nevins, 2012), but I move away from this term to avoid confusion with the notion of the Root as used in Distributed Morphology (Halle & Marantz, 1994).

As for the appearance of aspect morphology on V as in (4b) and (4c), it must be posited that Aspect features are shared between v_{ASP} and the higher Asp responsible for the semantic interpretation. The most likely feature-sharing mechanism at play is Agree. In this scenario, v_{ASP} Merges with interpretable Aspect features (e.g., [\pm perfective]); each Aspect feature is associated with a different semantics. Asp has a corresponding uninterpretable, unvalued feature and Probes and Agrees with v_{ASP} .

(6)



Thus, perfective/imperfective semantics are associated with a proper syntactic position for LF interpretation, and aspect morphology appears on the verbal stem. Further investigation into this Agree relation, with particular attention to its semantic ramifications, is warranted, though I leave this analysis in place for the purpose of the present discussion.

Before moving on, it should be noted that there is one dialectal construction that raises issues for the present analysis. Laka (2006a) discusses progressive constructions with *ari*, as in

(7).

- (7) emakume-a ogi-a jaten ari d-a
 woman-the bread-the eating PROG L-be.3S
 ‘The woman is eating the bread’

(Laka, 2006a, p. 173:(#1b))

In most cases in Basque, Laka analyzes *ari* as a verbal head that selects a postposition complement, which in turn selects an NP (which in the progressive is headed by a verb). In the structure in (3), *ari* would appear as v_{ASP} . However, in eastern dialects of Basque, Laka claims that *ari* is best analyzed as an Asp head outside of the vP , based on the case alternation observed on the subject DP.

- (8) gazteri-a-k pilot-a uzten ari d-u-ø
 youth-the-ERG ball-the leaving PROG L-have.3S-3S.ERG
 ‘The youth is leaving the ball’

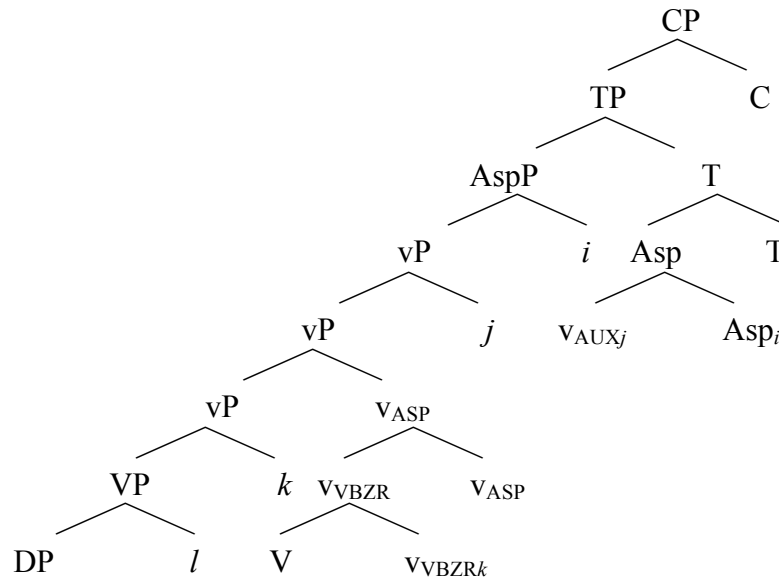
(Laka, 2006a, p. 175:(#3a))

The details of Laka’s analysis aside, while this dialectal construction offers evidence for an independent AspP selected by T, it does prove a challenge for the analysis that v_{AUX} raises through Asp to T. Should such movement occur here, it would be expected for *ari* to be somehow incorporate into AUX. However, the discussion in Chapters 3 and 4 offer compelling reasons to retain the analysis that v raises to T and is included in AUX, specifically its role in Case assignment, the generation the ABS and DAT morphemes on AUX, as well as the ABS agreement observed on the anchor of AUX. Thus, I proceed assuming that in most cases, v head-moves through Asp and both heads are ultimately included in AUX.³

³ Sincere thanks to Omer Preminger for helping me work through this issue.

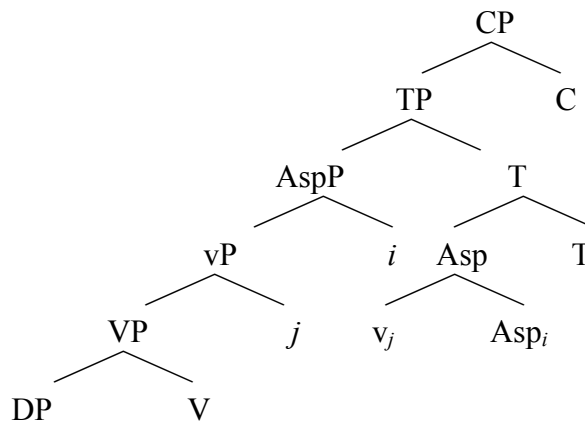
Thus, the final structure for intransitives is shown in (9).

(9)



Going forward, as in (10) v_{VBZR} and v_{AUX} will be omitted for the sake of clarity unless they are relevant to the discussion at hand; in such cases, ‘v’ is meant to refer to v_{AUX} .

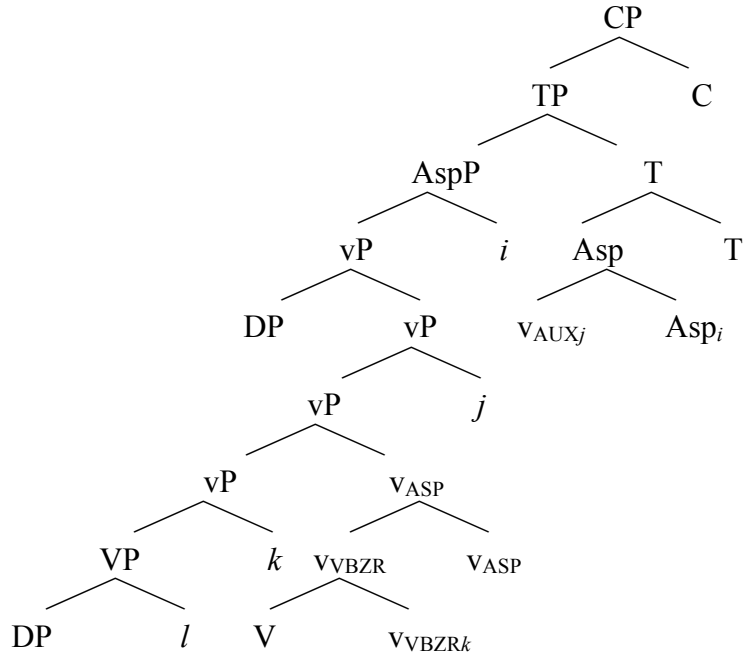
(10)



1.2 Transitive clause structure

The structure proposed for transitive clauses builds upon that in (9), but with the addition of an external argument (realized as the ERG subject) Merged in Spec, vP. This is shown in (11).

(11)

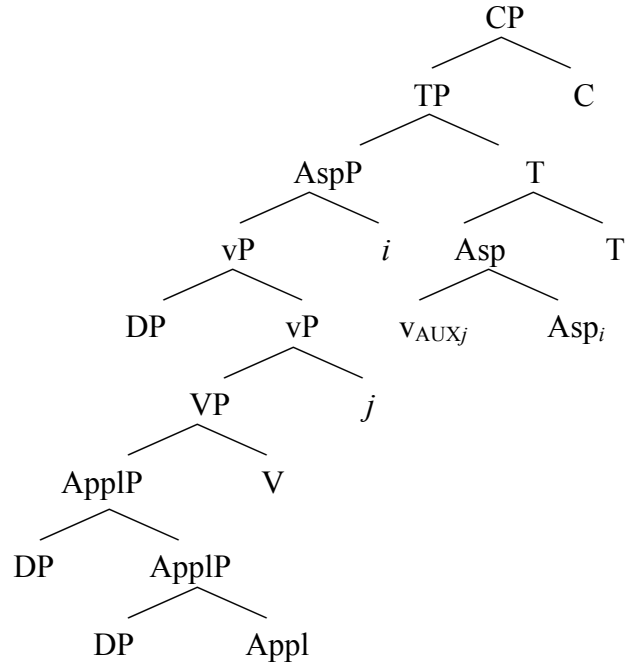


As (11) shows, the order of functional projections remains the same between clauses, as does the movement of the V to v_{VBZR} and v_{ASP} , and the movement of v through Asp to T to form the verbal participle and AUX, respectively. As in intransitives, and as will be discussed in detail in Chapters 3 and 4, v Agrees with the internal argument, valuing its unvalued features. The ERG argument enters an Agree relation with T.

1.3 Ditransitive clause structure

The introduction of an indirect object argument entails the inclusion of an additional vP-internal phrase, the Applicative Phrase (AppIP). The indirect object is introduced in the specifier of this projection, as seen in (12).

(12)

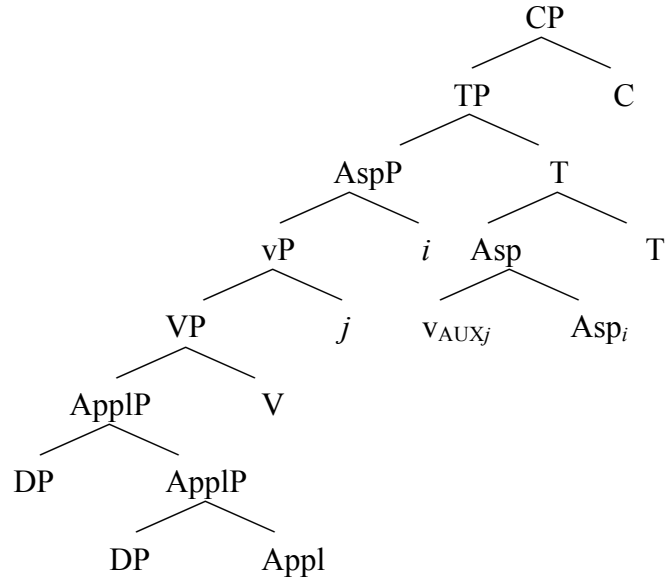


In (12), v_{VBZR} and v_{ASP} are omitted for clarity. The indirect object DP Merges above the direct object DP, the former in Spec, ApplP and the latter as the complement of Appl. While ApplP is not ultimately realized phonologically, its inclusion is suggested by the DAT Case of the indirect object. As with transitives and intransitives, V raises to v_{VBZR} and to v_{ASP} (not shown); v raises through Asp to T. It is still the case that v_{AUX} Agrees with the direct object (ABS DP); it will be shown in Chapters 3 and 4 that v_{AUX} Agrees with the indirect object (DAT DP) as well. Despite additional Agree relation with the DAT DP, it is still the ABS argument that values the uninterpretable Phi features of v.

1.4 Applicative intransitive clause structure

Finally, the structure in (13) is offered for applicative intransitive clauses like (1d).

(13)



Notice that (13) involves the same ApplP and internal argument positioning as the ditransitive structure in (12), but lacks the external (ERG) argument. Movement of V (omitted) and *v* through Asp to T remain the same as above, as do the Agree relations of *v*. Applicative intransitives and exceptions to this structure are detailed in Chapter 3.

This section has offered a preliminary clause structure for intransitives, transitives, ditransitives, and applicative intransitives under investigation here. Particular attention was paid to the position of AspP and the related v_{ASP} head, which ensures the proper semantic interpretation while accommodating the observed aspectual morphology on the main verb. At this point, little explanation has been offered for the relations that arise within these structures that ultimately yield the Case, agreement, and AUX patterns observed in Basque. These are explained in detail in Chapters 3 and 4. The following section offers a preliminary view of the composition of AUX.

2 Composition of AUX

The Basque AUX takes a multitude of forms, depending on factors such as Tense, and the Person and Number features of ERG, DAT, and ABS arguments. The morpheme order of AUX is shown in (14).

(14) ABS doubled clitic – v – (Asp) – T – DAT doubled clitic – ERG doubled clitic –C

A few notes should be made about (14). First, note that the analysis here is limited to present tense AUX. Notice that the final morpheme is a Complementizer morpheme; this morpheme is not included in the monoclausal constructions under consideration here, and therefore remains for future work (see Arregi & Nevins (2012) for an explanation of how these morphemes can be incorporated into AUX). Arregi & Nevins also note that in some dialects, an agreement morpheme can also appear in association with complementizers; to my knowledge, complementizer agreement morphemes do not arise in the Batua dialect analyzed here.

Directions for future work on the generation of complementizers, and a possible extension of the present analysis to dialects that do include complementizer agreement morphemes, is offered in Chapter 8.

Second, notice that the schema in (14) shows three morphemes representing Case-marked sentential arguments. These morphemes are labeled as doubled clitics, and will be discussed in Chapter 4. However, it is never the case that these three doubled clitics will appear together; the co-occurrence of DAT and ABS doubled clitics is prohibited in most AUX contexts, and when the two can co-occur, it is in constructions lacking an ERG argument. Therefore, the ABS doubled clitic does not appear in ditransitives or (most) applicative intransitives. In lieu of the ABS doubled clitic in these contexts, the morpheme /d/ is inserted post-syntactically. It will be argued ABS doubled clitics do not arise in the case of 3rd Person ABS arguments, and /d/ is

inserted there as well. The restrictions on ABS clitic doubling, and the characterization and origin of the morpheme /d/ will be explored in Chapters 3 and 4.

Third, note that *v* and *T* (along with *Asp*) together constitute the anchor of *AUX*.

Regarding the form of these heads, *Asp* is never overtly realized in the construction analyzed here. *T* reflects Tense features (here, present tense), but is also sensitive to the form of *v*, which in turn represents the Phi features of the ABS argument. How this inflection arises, and why *ERG* and *DAT* features do not surface on the anchor of *AUX*, is explained in Chapter 3. Beyond its feature valuation, the form of *v* is also dependent on the presence/absence of *ERG* and *DAT* clitics, and that these clitics do not always correspond to underlying argument structure (Arregi & Nevins, 2012; Arregi, 2004). However, for ease of expression, I will refer to *AUX* as follows:

Table 1. *AUX* reference

	ERG doubled clitic?	DAT doubled clitic?
Intransitive AUX	No	No
Transitive AUX	Yes	No
Ditransitive AUX	Yes	Yes
Applicative Intransitive AUX	No	Yes

The nomenclature in Table 1 applies in the majority of canonical cases under investigation here. For ease of reference, I will use these terms, fully acknowledging that they do not offer a complete picture of the characterization of *AUX*. This will be addressed in Chapter 5, where it is made clear how *v* morphologically reflects the clitic context in which it appears.

In sum, the challenge going forward is to explain how doubled clitics are generated for *ERG*, *DAT* and *ABS* arguments, while restricting the context in which *ABS* doubled clitics appear. Once the clitics' origins are shown, their movement to and position on *AUX* must be explored. Additionally, the appearance of *ABS* features (only) on *v*, and the influence of the form of *v* on *T*, must be explained.

Before proceeding, note that the following tables show for forms of AUX that will be accounted for in the analysis of the following chapters. In these tables, “X” stands for a verb of appropriate valency.

Table 2. Full present-tense intransitive auxiliary paradigm: *izan* ‘to be’

Morpheme Order: ABS (subject) – Anchor

	SG	PL
1	n-a-iz ‘I have X’	g-ar-a ‘We have X’
2	z-ar-a ‘You have X’	z-ar-a-te ‘Y’all have X’
3	d-ø-a ‘S/he has X’	d-ir-a ‘They have X’

(de Rijk, 2008, p. 122)

Table 2 shows the ‘intransitive’ (i.e., lacking ERG or DAT doubled clitic) AUX. The morphemes in the first position are clitics doubling the 1st or 2nd Person ABS arguments; in 3rd Person contexts, /d/ is inserted in lieu of a doubled clitic. The morphemes in the second and third positions are the anchor AUX. The second-position morpheme is v inflected with ABS features, and the third position morpheme is T; note that this order is reversed in the case of the 1st Person singular ABS argument. The form of T remains consistent (/a/) throughout the paradigm. Finally, note that the morpheme /te/ appears in AUX-final position in the case of a 2nd Person plural ABS argument; this is a plural marker and will be explained in Chapter 5.

Table 3. Full present-tense transitive auxiliary paradigm: *edun* ‘to have’

Morpheme order: ABS (direct object) – Root – ERG (subject)

		ABSOLUTIVE (Direct Object)					
		1.SG	2.SG	3.SG	1.PL	2.PL	3.PL
ERGATIVE (Subject)	1.SG		z-ait-u-t ‘I have X you’	d-ø-u-t ‘I have X it’		z-ait-uz-te-t ‘I have X y’all’	d-it-u-t ‘I have X them’
	2.SG	n-a-u-zu ‘You have X me’		d-ø-u-zu ‘You have X it’	g-ait-u-zu ‘You have X us’		d-it-u-zu ‘You have X them’
	3.SG	n-a-u-ø ‘S/he has X me’	z-ait-u-ø ‘S/he has X you’	d-ø-u-ø ‘S/he has X it’	g-ait-u-ø ‘S/he has X us’	z-ait-uz-te-ø ‘S/he has X y’all’	d-it-u-ø ‘S/he has X them’
	1.PL		z-ait-u-gu ‘We have X you’	d-ø-u-gu ‘We have X it’		z-ait-uz-te-gu ‘We have X y’all’	d-it-u-gu ‘We have X them’
	2.PL	n-a-u-zue ‘Y’all have X me’		d-ø-u-zue ‘Y’all have X it’	g-ait-u-zue ‘Y’all have X us’		d-it-u-zue ‘Y’all have X them’
	3.PL	n-a-u-te ‘They have X me’	z-ait-uz-te ‘They have X you’	d-ø-u-te ‘They have X it’	g-ait-uz-te ‘They have X us’	z-ait-uz-te-te ‘They have X y’all’	d-it-uz-te ‘They have X them’

(de Rijk, 2008, pp. 195–6)

Table 3 shows the ‘transitive’ (i.e, ERG clitic, no DAT clitic) AUX forms. As in the intransitives, the first position morpheme is the ABS doubled clitic, unless the argument is 3rd Person. The second-position morpheme is *v*, inflected for the features of the ABS argument and reflecting the ERG clitic context. T is sensitive to the form of *v*. As in intransitives, the plural marker /-(z)te/ appears with 2nd Person ABS and ERG arguments, with the addition of 3rd Person ERG contexts as well. Finally, note that no AUX is available when the Person features of the ERG and ABS arguments match. This prohibition is addressed in Chapter 5.

Table 4. 3.SG.ABS present-tense ditransitive auxiliary paradigm: *edun* ‘to have’

Morpheme order: ABS (direct object) – Root – ERG (subject) – DAT (indirect object)

<i>ABSOLUTE (Direct Object) = 3.SG</i>							
ERGATIVE (Subject)		DATIVE (Indirect Object)					
		1.SG	2.SG	3.SG	1.PL	2.PL	3.PL
	1.SG		d- \emptyset -i-zu-t ‘I have X it to you’	d- \emptyset -i-o-t ‘I have X it to him/her’		d- \emptyset -i-zue-t ‘I have X it to y’all’	d- \emptyset -i-e-t ‘I have X it to them’
	2.SG	d- \emptyset -i-da-zu ‘You have X it to me’		d- \emptyset -i-o-zu ‘You have X it to him/her’	d- \emptyset -i-gu-zu ‘You have X it to us’		d- \emptyset -i-e-zu ‘You have X it to them’
	3.SG	d- \emptyset -i-t- \emptyset ‘S/he has X it to me’	d- \emptyset -i-zu- \emptyset ‘S/he has X it to you’	d- \emptyset -i-o- \emptyset ‘S/he has X it to him/her’	d- \emptyset -i-gu- \emptyset ‘S/he has X it to us’	d- \emptyset -i-zue- \emptyset ‘S/he has X it to y’all’	d- \emptyset -i-e- \emptyset ‘S/he has X it to them’
	1.PL		d-i-zu-gu ‘We have X it to you’	d- \emptyset -i-o-gu ‘We have X it to him/her’		d- \emptyset -i-zue-gu ‘We have X it to y’all’	d- \emptyset -i-e-gu ‘We have X it to them’
	2.PL	d- \emptyset -i-da-zue ‘Y’all have X it to me’		d- \emptyset -i-o-zue ‘Y’all have X it to him/her’	d- \emptyset -i-gu-zue ‘Y’all have X it to us’		d- \emptyset -i-e-zue ‘Y’all have X it to them’
	3.PL	d- \emptyset -i-da-te ‘They have X it to me’	d- \emptyset -i-zu-te ‘They have X it to you’	d- \emptyset -i-o-te ‘They have X it to him/her’	d- \emptyset -i-gu-te ‘They have X it to us’	d- \emptyset -i-zue-te ‘They have X it to y’all’	d- \emptyset -i-e-te ‘They have X it to them’

(de Rijk, 2008, pp. 350–1)

Table 4 shows half of the ditransitive (i.e., ERG and DAT clitic-containing) AUX paradigm. The forms here are used with a singular ABS argument. This is shown by the null v (\emptyset). With plural ABS arguments, v takes the form /izk/, occupying second position. The form of T is consistent throughout (/i/). As above, the plural marker /(t)e/ appears with 2nd and 3rd Person plural arguments. Note that no ABS doubled clitics are included in the paradigm; in all cases, the morpheme /d/ is inserted.

Table 5. Applicative intransitive auxiliary paradigm: *izan* ‘to be’

		ABSOLUTE (Subject)					
		1.SG	2.SG	3.SG	1.PL	2.PL	3.PL
DATIVE (Indirect Object)	1.SG		za-tza-i-t ‘I have X to you’	∅-za-i-t ‘I have to X it’		za-tzaizk-i-t-e ‘I have X to y’all’	∅-zaizk-i-t ‘I have X to them’
	2.SG	na-tza-i-zu ‘You have X to me’		∅-za-i-zu ‘You have X to it’	ga-tzaizk-i-zu ‘You have X to us’		∅-zaizk-i-zu ‘You have X to them’
	3.SG	na-tza-i-o ‘S/he has X to me’	za-tza-i-o ‘S/he has X to you’	∅-za-i-o ‘S/he has X to it’	ga-tzaizk-i-o ‘S/he has X to us’	za-tzaizk-i-o-te ‘S/he has X to y’all’	∅-zaizk-i-o ‘S/he has X to them’
	1.PL		za-tza-i-gu ‘We have X to you’	∅-za-i-gu ‘We have X to it’		z-a-tzaizk-i-gu-te ‘We have X to y’all’	∅-zaizk-i-gu ‘We have X to them’
	2.PL	na-tza-i-zu-e ‘Y’all have X to me’		∅-za-i-zu-e ‘Y’all have X to it’	ga-tzaizk-i-zu-e ‘Y’all have X to us’		∅-zaizk-i-zu-e ‘Y’all have X to them’
	3.PL	na-tza-i-e ‘They have X to me’	za-tza-i-e ‘They have X to you’	∅-za-i-e ‘They have X to it’	ga-tzaizk-i-o-e ‘They have X to us’	za-tzaizk-i-e-te ‘They have X to y’all’	∅-zaizk-i-e ‘They have X to them’

(Euskaltzaindia, 1973)

Table 5 shows applicative intransitive AUX forms. Recall from Section 1.3 and 1.4 above that non-3rd Person ABS arguments are restricted in most applicative intransitives. For full expository purposes, the AUX forms shown in this table for 1st and 2nd AUX forms are those forms licensed in the rare case that an ABS doubled clitic can be generated in the presence of a DAT doubled clitic. Most commonly seen are the 3rd Person singular and plural ABS forms in the white columns of Table 5. Note when an ABS clitic is not generated (i.e., in 3rd Person contexts), the inserted morpheme is null (/∅/) and not /d/, as in the paradigms above; forms of the morpheme in this position will be discussed further in Chapter 4. As above, *v* is in second position and is

inflected for the features of the ABS argument. Also, the plural marker /-(t)e/ is included in 2nd and 3rd Person plural contexts.

This section has offered a basic template for AUX morphemes, noting some restrictions that lead to the complex derivations of AUX that will be offered in the following chapters. Also, for expository purposes, full AUX paradigms have been shown, with AUX broken down into its morphemic components.

3 Nominal and verbal features

There are several syntactic and morphological features whose values play a role in the analysis that follows. This section addresses the relevant portions of the Basque feature inventory, and presents theoretical assumptions about the nature of these features.

The relevant feature categories in the verbal domain are Mood, Tense, and Aspect. This project focuses on indicative AUX, and thus on periphrastic verbal constructions containing a verbal participle and AUX verb. Moods include indicative, conditional, subjunctive, imperative, and potential (de Rijk, 2008, p. 142). Looking into Tense and Aspect, six combinations are observed in the indicative mood. These are illustrated in (15) with an intransitive verb.

- (15) a. *Present imperfect*
Ibaira eror-tzen da
River.in fall-IMPF AUX.PRES
'He is falling into the river'
- b. *Past imperfect*
Ibaira eror-tzen zen
River.in fall-IMPF AUX.PAST
'He was falling into the river'
- c. *Present perfect*
Ibaira eror-i da
River.in fall-PERF AUX.PRES
'He has fallen into the river'

- d. *Past perfect*
 Ibaira eror-i zen
 River.in fall-PERF AUX.PAST
 ‘He fell into the river’
- e. *(Present) future*
 Ibaira eror-iko da
 River.in fall-FUT AUX.PRES
 ‘He will fall into the river’
- f. *Past future*
 Ibaira eror-iko zen
 River.in fall-FUT AUX.PAST
 ‘He was going to fall into the river’

(de Rijk, 2008, pp. 143:(#1–6))

As seen in (15), the main locus of Tense is AUX, which has possible values of [+past] (=Past) and [-past] (= Present). The participle bears Aspect marking of [+perfective] (=Perfective), [-perfective] (=Imperfective). A third option is what de Rijk considers ‘future’, or what Laka (2006a) terms ‘irrealis’. This project focuses on present perfective constructions, and therefore AUX will always be [-past] and the participle will always be [+perfective] unless otherwise indicated.

Regarding nominal features, DPs are commonly understood to be marked as [\pm definite], indicated by a post-nominal determiner, as in (16).⁴

- (16) a. gizon-a
 man-DEF
 ‘the man’
- b. gizon bat
 man one
 ‘a man’

(de Rijk, 2008, p. 17)

⁴ Proper nouns, e.g., names of people, are (almost) never marked with a [+definite] determiner (Laka, 1996).

Beyond definiteness, DPs are also marked for *C/case*. This includes ABS, ERG, and DAT Case, as well as a number of semantic case markers; (17) shows the syntactic case markers on singular, definite DPs.⁵

- (17) a. gizon-a- \emptyset
 man-DEF-ABS
 ‘the man (ABS)’
- b. gizon-a-k
 man-DEF-ERG
 ‘the man (ERG)’
- c. gizon-a-ri
 man-DEF-DAT
 ‘the man (DAT)’

Turning to Phi features, Basque lacks a grammatical gender system (Laka, 1996). The Number feature values are singular and plural, while Person feature values are 1st Person, 2nd Person, and 3rd Person. These distinctions are demonstrated in the pronominal system shown in Table 6.

Table 6. Pronominal system showing Person/Number feature values (ABS Case)

	Singular	Plural
1st Person	ni	gu
2nd Person	zu	zuek
3rd Person⁶	hura	haiek

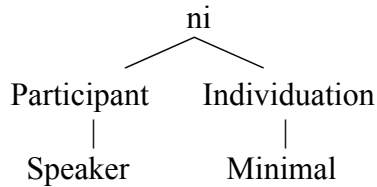
The exact characterization of Phi features as privative or bivalent is not entirely settled. For some, privativity—the wholesale presence or absence of Phi features—is the best approach, with specific values are best represented in an entailment relation; Harley & Ritter (2002, p. 489), for

⁵ The form of the Case markers is sensitive to the Number feature of the DP, as well as phonological factors.

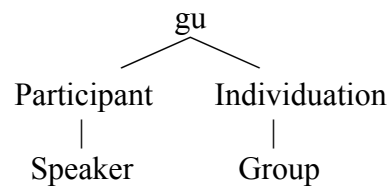
⁶ Basque has several 3rd Person demonstrative pronouns; traditionally, *hura* and *haiek* are used in paradigms (Laka, 1996).

example, would offer the following characterization for the Basque pronominal inventory shown in Table 6.

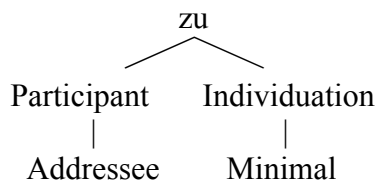
(18) a. *First Person Singular*



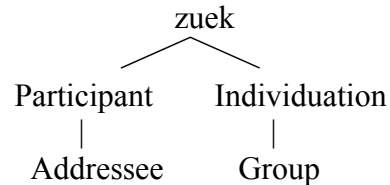
b. *First Person Plural*



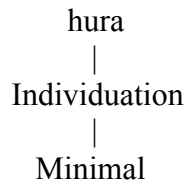
c. *Second Person Singular*



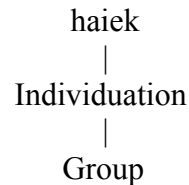
d. *Second Person Plural*



e. *Third Person Singular*



f. *Third Person Plural*



Alternatively, and perhaps more commonly, Phi feature values can be characterized as bivalent, with associated positive and negative valuation (e.g., Harbour, 2013). This is the view adopted in this analysis, although the assumption of bivalent features does not necessarily rule out hierarchical relations like those in (18). Following the bivalent features suggested by Adger (2006, p. 507:(#2)), I adopt the following.

(19) a. *First Person Singular:* ni [+singular; +participant; +author]

b. *First Person Plural:* gu [-singular; +participant; +author]

c. *Second Person Singular:* zu [+singular; +participant; -author]

d. *Second Person Plural:* zuek [-singular; +participant; -author]

- e. *Third Person Singular* hura [+singular; -participant] **or** [+singular]
- f. *Third Person Plural* haiek [-singular; -participant] **or** [-singular]

In (19), Number is determined by the value of the [\pm singular] feature, while Person is determined by a combination of [\pm participant; \pm author]. Notice that the [+participant] entails the inclusion of a bivalent Author feature; [-participant] (i.e., 3rd Person arguments) lack an author specification.

In (19e) and (19f), note that two possible feature specifications are offered; the feature bundle that surfaces depends on whether the DP is a direct object or indirect object argument, as will be discussed in Chapter 3.

A final note regarding bivalent features: like privative features, on some accounts bivalent features too can be present/absent, wholesale (Adger & Harbour, 2007; Harbour, 2013). For example, a 3rd Person argument could have a [-participant] feature, or could lack a [Participant] feature altogether. A difference in interpretation is associated with the absence of a feature (as opposed to a negative value); in e.g., Kiowa, this difference manifests in an interpretation of (in)animacy, with arguments lacking a Participant feature altogether being inanimate (Adger & Harbour, 2007). The implications of an absent feature in a bivalent system will be addressed further in Chapter 3.

This chapter has offered the syntactic background necessary to support the analysis of AUX presented in the following chapters. Aspects of this analysis include Case assignment, agreement, and clitic doubling. To set up this analysis, this chapter has shown the assumed basic clause structure for intransitive, transitive, ditransitive, and applicative intransitive clauses (Section 1). Section 2 offered a preliminary template for AUX, and has reviewed the forms that present tense, indicative AUX takes in intransitive, transitive, ditransitive, and applicative intransitive environments; it was noted that the form of AUX does not always correspond to

valency, but that these terms would be used for ease of reference until a point in analysis where it could be discussed further. Finally, Section 3 briefly presented the verbal and nominal features that are relevant to the analysis at hand and explained the bivalent approach to Phi features being adopted here. Building on these basics, the following chapter addresses Case assignment and agreement.

CHAPTER 3: Case and Auxiliary Agreement in Basque

Case is a central aspect of the Minimalist approach to syntax (Chomsky, 2000, 2001), with structural Case assignment mechanisms accounting for a broad range of cross-linguistic data. Outlying data are often accounted for by appealing to non-structural (inherent) Case. However, some data cannot be neatly accommodated by conventional Agree-based Case assignment. These facts include the behavior of underlyingly intransitive unergatives, the possibility of multiple instances of the same case marking within a single case assignment domain, and seeming mismatches between Case morphology on a DP and the morphemes on the auxiliary (AUX). A structural analysis of Case in Basque needs to address these facts.

The relation Agree¹ is understood to underlie structural Case assignment, facilitate DP licensing, and inform morphological agreement (Chomsky, 2000, 2001). A major assumption of the analysis in this chapter is that Agree is also critical to clitic doubling. As will be discussed in detail in the next chapter, I analyze the absolutive (ABS), ergative (ERG), and dative (DAT) morphemes on AUX as doubled clitics. These clitics are generated by the operation M-merger (Harizanov, 2014; Kramer, 2014; Matushansky, 2006), for which Agree is prerequisite. Thus, the ABS, ERG, and DAT arguments must be in Agree relations with functional heads in order for doubled clitics to surface.

¹ Here, I refer to the outcome of the operation Agree as the ‘Agree relation’, which is defined as:
An uninterpretable feature F on a syntactic object T is checked when Y is in a c-command relation with another syntactic object Z which bears a matching feature F.
(Adger, 2003, p. 168:(#65))

Therefore, once the relevant features are valued, the Probe and Goal can be spoken of as being in an Agree relation.

There are a few restrictions² on Basque clitic doubling that are relevant for the analysis of Agree presented here. First, while the inventory of ERG and DAT clitics reflect both the Person and Number features of the arguments they double, I claim that Basque lacks 3rd ABS Person clitics (Arregi & Nevins, 2012). Additionally, in many instances there is a prohibition on the co-occurrence of ABS and DAT doubled clitics, an instance of the Person-Case Constraint (PCC). Finally, the only argument whose Phi features are reflected on the anchor³ of AUX is the ABS argument. Thus, an account of agreement in Basque needs to address the following desiderata:

- (1) What Agree relationships need to occur to generate ABS, ERG, and DAT doubled clitics via M-merger, while ensuring that:
 - a. ABS 3rd Person doubled clitics are not inadvertently generated.
 - b. the interaction between Agree and C/case assignment is clear.
 - c. the PCC is derived
 - d. agreement on the anchor of AUX is triggered by the ABS argument and only the ABS argument.

This section offers an analysis of Case assignment and agreement in Basque that accounts for the complex facts cited above; a full analysis of clitic doubling is offered in the next chapter.

Ultimately, it is argued that ABS and ERG Case are assigned structurally (via Agree), while DAT Case is inherent. With regard to agreement, the Agree operation is split between the syntactic and post-syntactic components (cf. Arregi & Nevins, 2012), which accounts for the appearance of doubled clitics versus anchor inflection on AUX. Finally, Person and Number Probe separately but concurrently, and may be specified to seek Goals with specific feature values, which accounts for clitic distribution and PCC effects.

² These restrictions will be fully explored in the following chapter.

³ The core of AUX has also been referred to as the ‘root’ (Arregi & Nevins, 2012), but I move away from this term to avoid confusion with the notion of the Root as used in Distributed Morphology (Halle & Marantz, 1994). Many thanks to members of the Georgetown University Morphosyntax seminar for helping with the term ‘anchor’.

The organization of this chapter is as follows. Section 1 discusses ABS arguments, explaining how they obtain Case structurally and how ABS agreement appears on the anchor of AUX. Section 2 discusses ERG arguments, taking a structural view of Case assignment, assessing arguments for the opposing inherent Case viewpoint, and showing how ERG features do not appear on the anchor of AUX despite the argument being in an Agree relation in the syntax. Section 3 explores DAT arguments, looking at both ditransitive and applicative intransitive constructions. DAT Case is claimed to be inherent and the absence of DAT features on the anchor of AUX, despite the Agree relation that facilitates their clitic doubling, is explained. This section also reviews the PCC in Basque, deriving it from clitic doubling facts.

1 ABS arguments

This section analyzes Case assignment and agreement pertaining to arguments with ABS Case. In unaccusative intransitive clauses, this argument is the subject; in transitive and ditransitive clauses, it is the direct object. This is shown in (2).⁴

- (2) a. Umea-∅ etorri d-a
 child-ABS come L-be.3S
 ‘The child has come’
- b. Jon-ek umea-∅ ikusi d-u-∅
 Jon-ERG child-ABS seen L-have.3S-3S.ERG
 ‘Jon has seen the child’
- c. Miren-ek Jon-i umea-∅ eman d-i-o-∅
 Miren-ERG Jon-DAT child-ABS given L-have.3S-3S.DAT-3S.ERG
 ‘Miren has given the child to Jon’

I argue that this is an instance of structural Case assignment (via Agree) in Basque, and that the reflection of ABS features on the anchor of AUX results from agreement with v.

⁴ All data are from original fieldwork unless otherwise noted.

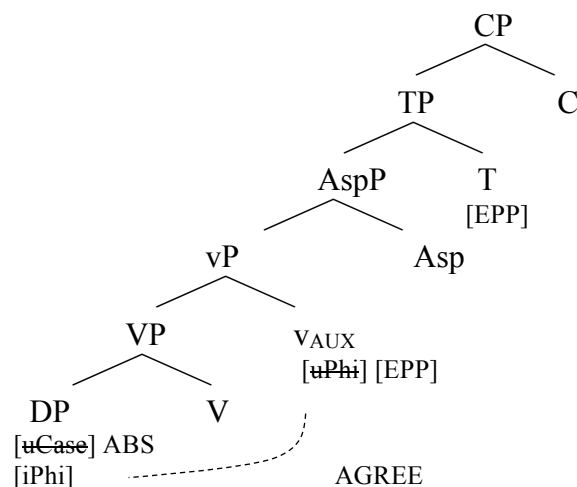
1.1 ABS Case assignment is structural

Structural Case is the default mechanism for Case assignment in Minimalism, arising via Agree between a functional head and a DP argument with an unvalued, uninterpretable Case feature. For example, in well-behaved NOM-ACC languages (e.g., English), T assigns NOM to subject arguments in Spec, vP, while v assigns ACC to internal arguments. Ideally, this core operation of the syntactic theory will account for as much data as possible; in this section, I show that ABS Case is assigned structurally, via Agree with v.

1.1.1 Proposal for structural Case assignment

The claim that ABS Case in Basque is structurally assigned is not new, nor particularly controversial (Anand & Nevins, 2006; Rezac, Albizu, & Etxepare, 2014; Rezac, 2008b), though this position in Basque not universally accepted (Laka, 2006b). In this analysis, structural Case is assigned as a result of the Agree relation between v (the Probe) and a lower DP Goal. This is exemplified in an unaccusative intransitive clause in (3) below.

(3) *Structural ABS Case assignment*



In (3), *v* is a Probe because of its uninterpretable, unvalued Phi features, which are valued by the interpretable Phi features on the DP complement of *V*. The features of the Probe are valued via Agree, as is the uninterpretable Case feature of the DP.

This is a conventional instance of Agree,⁵ and the approach to ABS Case assignment also holds in transitive and ditransitive clauses. External arguments do not intervene, as they Merge in Spec, *v*P outside of the search domain of the Probe *v*; indirect object (DAT) arguments, though Merged above the direct object (ABS) argument, are claimed to receive inherent DAT Case upon first Merging in Spec, ApplP and thus do not have an unvalued Case feature to be valued as ABS by *v*. The following section addresses some challenges to this otherwise straightforward analysis of ABS Case.

1.1.2 Challenges to structural analysis

There are alternative proposals to the structural approach suggested above. Laka (2006b), for example, argues for an inherent analysis of ABS Case; while she notes that the majority of the data can be adequately handled by either a structural or inherent account, there is one fact she finds irreconcilable with the structural approach: intransitive unergatives that clearly do not have an underlying direct object. An example is shown in (4).

- (4) a. Jon-ek korri egin d-u-ø
Jon-ERG run do L-have.3S-3S.ERG
'Jon has run'

⁵ The technicalities of the operation will be revisited and revised throughout this chapter to account for additional data.

- b. Jon-ek korritu d-u-ø
 Jon-ERG run L-have.3S-3S.ERG
 ‘Jon has run’

(Hualde & Ortiz de Urbina, 2003, pp. 389–390:(#585a–b))⁶

In (4), the ERG marking on the subject is unexpected. Laka (2006b, p. 379) says: “...in structural-case accounts of ergativity, assignment of absolutive case is required whenever ergative case is assigned.” Following a common analysis of unergatives (Laka, 1993), (4a) can be analyzed as underlyingly transitive: the participle [*korri egin*] is a light verb (*egin*, ‘do’) with an NP complement (*korri*, ‘run’). On this view, the (NP) participle receives ABS Case from v, while the external argument (*Jon-ek*) can receive ERG Case via Agree with T. However, the verb in (4b) does not allow for this analysis, as *egin* is not present. To find an argument to obtain ABS Case so that the subject receives ERG Case requires the postulation of an underlying null argument (as in Laka, 1993, among others).

Preminger (2012) outlines the arguments for postulating an underlying object, including the selection of the transitive AUX (in (20), *du*) over the intransitive AUX (*da*), as well as seeming 3rd Person singular features on the anchor of AUX. However, as he points out, AUX selection is not necessarily driven by transitivity, but rather by the presence of ERG and DAT doubled clitics in AUX (Arregi, 2004), and the apparent 3rd Person singular ABS morphology could be an instance of default features and not evidence of agreement.

Preminger provides three other pieces of evidence against the underlying null object account. These include i) a handful of unergative verbs (e.g., *eskiatu* ‘ski’; *disdiratu* ‘shine’) that lack corresponding nominals put forth by Laka (2006a), which cannot appear in constructions

⁶ The data in (4) show two formulations of the Basque verb ‘run’: *korri egin* and *korritu*. The former consists of an indefinite object noun *korri* ‘run’ and the verb *egin* ‘to make, do’. The latter, *korritu*, is a verbal participle.

like (20a); ii) iterative constructions with unergatives where the nominal is introduced by a postposition, precluding its receipt of structural ABS Case (and thus looking more like (20b), in which ERG appears without an ABS argument); iii) long-distance agreement constructions (Preminger, 2009) in which ERG Case is assigned to the subject of a matrix clause whose AUX shows ABS agreement with the ‘downstairs’ embedded argument – which suggests that ERG Case need not depend on the prior assignment of ABS in the same clause. Thus, Preminger (2012) shows that there is no convincing evidence for the stipulation of underlying null objects in true unergatives beyond its usefulness in forcing a dependent, structural Case analysis. The analysis of structural ERG Case assignment presented in Section 2 below (Rezac et al., 2014), is able to account for ERG Case assignment in this context.⁷

However, this raises the question of dependency in structural Case assignment that Laka cites. Indeed, Preminger (2014) highlights another instance in which ERG Case appears without an argument bearing ABS in the same clause, shown in (5).

- (5) [[Harri horrie-k] altxa-tze-n] probatu d-ø/it-u-(z)te⁸
 Those stone-PL.ABS lift-NMZ-LOC attempted L-3S/3P-AUX-3P.ERG
 ‘They attempted to lift those stones’

(Preminger, 2014, p. 148:(#137))⁹

In (5), the 3rd Person plural main clause subject is represented by the ERG clitic *-(z)te*; note, however, that there is no ABS argument in the main clause. Rather, ABS case is observed on the embedded object *harri horriek* ‘those stones’. In this example, it seems that the anchor of AUX

⁷ The evidence from Preminger (2012) summarized here offers evidence against an inherent analysis of ERG, but does seem to suggest a tight link between ABS Case and a Theme theta role, which Laka (2006b) takes as evidence of inherent Case assignment of the ABS Case. Further discussion will offer counterexamples to the ABS – Theme correlation.

⁸ There is no morphological significance to the presence of /z/ in the plural morpheme /zte/; this is presumably inserted for phonological reasons.

⁹ Note that the Long-Distance Agreement in (5) is optional.

can show agreement with the embedded object (*dituzte*), or can demonstrate default (3rd Person singular) agreement (*dute*). If there were an implicit direct object in the main clause (allowing ERG to appear on the subject), then it would be impossible for AUX to show agreement with the embedded object (through 3rd Person plural agreement features). Preminger shows an example of this situation as well, in which the subject of the (presumably intransitive) main clause is ABS and controls agreement on AUX, despite the presence of an embedded object:

- (6) [Liburua irakur-tze-n] saiatu d-ira/*a
book.ABS read-NMZ-LOC tried L-3P.AUX/*3S.AUX
 ‘They tried to read the book’

((Preminger, 2014, p. 149:(#138))

To explain the lack of ABS Case assignment despite the presence of an ERG argument, as in (4b), Rezac et al. (2014) suggest that the Case-assigning abilities of *v* are parameterized, and while Case-assigning *v* (which they term ‘*v*_{ABS}’) appears when ABS Case is assigned, it is not present in intransitive unergatives; this proposal is strengthened by the parallels with T in unaccusative intransitives, presented in Section 2 below. Therefore, ABS Case cannot be assigned and the dependency of ERG Case on ABS is removed. Assuming Preminger’s (2014) view of agreement failure, it is simply the case that *v* bears default (3rd Person singular) feature values, as is shown in AUX agreement on unergatives in (4).

More troubling for the structural analysis of ABS Case are data as in (6), in which there are two instances of ABS Case. In this construction, I assume structural Case is assigned to the main clause subject by the *v* of the main clause, resulting in ABS Case for the subject and agreement with its features on the anchor of AUX. This leaves the ABS Case that appears on the embedded DP, *liburua* ‘book’. The clause is a nominalization introduced by a locative PP, which

in turn selects an nP complement (spelled out as *tze*) (Etxepare, 2006, p. 322). Etxepare (2006) discusses how *tze* nP complements can select clausal complements; indeed, Arteatz (2012) shows that *tzen* complements of perception verbs can introduce subjects, indicating that n selects a vP which introduces an external argument position within the nominalization.

- (7) Jon-ek [Miren- \emptyset pianoa- \emptyset jo-tze-n] ikusi d-u- \emptyset
 Jon-ERG [Miren-ABS piano-ABS play-NMZR-LOC] seen L-have.3S-3S.ERG
 ‘John has seen Mary playing the piano’

(Arteatz, 2012, p. 398:(#1))

Adopting this analysis leaves open an avenue by which ABS Case could be assigned structurally in the nominalization, assuming that the Probing v is v_{ABS} . However, given the Agree-based analysis of clitic doubling put forth in the following chapter, this raises the question of why ABS clitics do not double the argument of the nominalization; if this v_{ABS} is the same as the one selected by AspP, then it should trigger the same clitic doubling reflex. One way of addressing this is to suggest that the lack of T within the nominalization is the reason: without a T to raise to, v_{ABS} is not Spelled Out and therefore any doubled clitics have no phonological material to cliticize to. This would require that a doubled clitic is indeed generated in the syntax, but deleted somewhere in the morphology or phonology. Alternatively, it could be considered that the ABS Case within the nominalization is an instance of default case assigned in the morphology to caseless arguments (described in more detail below). Clitic doubling would be predicted not to occur because Agree between v_{ABS} and the DP argument does not arise. In this scenario, the v selected in nominalizations would *not* be v_{ABS} .

Before moving on, note that Preminger (2011b) cites a final piece of evidence suggesting that ABS Case may not, in fact be assigned structurally. This claim is based on the observation

that PCC effects that hold in ditransitives are not observed when that predicate is introduced in an infinitival clause.

- (8) a. *Zu-k harakina-ri ni- \emptyset saldu n-ai-o-zu
 You-ERG butcher.the-DAT me-ABS sold 1S.ABS-have.1S-3S.DAT-2S.ERG
 ‘You have sold me to the butcher’
- b. Gaizki irudi-tzen \emptyset -zai-t
 Wrong look-IMP L-have.3S-1S.DAT
- [zu-k ni- \emptyset harakina-ri sal-tze-a]
 [you-ERG me-ABS butcher.the-DAT sold-NMZ-DET]
 ‘It seems wrong for you to sell me to the butcher’

(Laka, 1996; as cited by Preminger, 2011b, p. 929:(#23b–24))

Preminger points out that since vP that licenses the internal argument *ni* ‘me’ in (8b) via Agree, it should be able to do so in the finite clause in (8a) as well, and takes this as evidence that ABS Case is not dependent on Agree. He does not rule out, however, that the mechanisms by which ABS Case appears on the direct object in (8a) versus (8b) may, in fact, be different.

In such cases where v might not be able to assign Case structurally (or license an ABS argument via Agree), I appeal to the morphology for case assignment. Arregi & Nevins (2012, p. 21) argue that all instances of ABS case in Basque are, in fact, accomplished through the post-syntactic insertion of case features to arguments that do not receive case in the syntax. While I maintain that structural Case assignment can and does occur when v_{ABS} is available, it is plausible that a morphological default is inserted when it is not, and that that default setting is ABS. Notice that the argument receiving default case from the morphology cannot be doubled by a clitic, nor can it value the agreement features on the anchor of AUX. The drawback of this analysis is that it does not account for DP licensing, beyond fulfilling the selectional requirements of the elements of that clause.

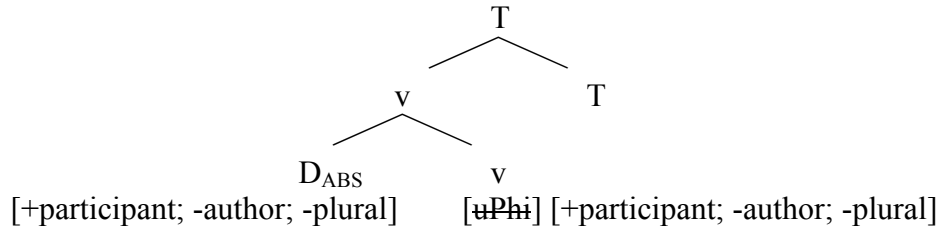
To summarize, this section has adopted a structural analysis of ABS Case via Agree with v . Specifically, following Rezac et al. (2014), this v is v_{ABS} , to be distinguished from another parametric option, a v which is not a Case-assigner. It is the latter that appears in true intransitive unergatives, which Preminger (2012) argued not to have an underlying null object. This removes the need to rely on the dependency of ERG Case assignment on assignment of ABS Case in these structures. Finally, it was shown that multiple instances of ABS Case are not always a challenge for the structural approach, as with nominalizations that include a second ABS-assigning vP (Etxepare, 2006); when structural Case assignment is truly not a viable option, it was suggested that the appearance of ABS Case is in fact a morphological default (Arregi & Nevins, 2012; Marantz, 1991; Preminger, 2011b).

1.2 Agreement with ABS argument

This section reviews AUX agreement with the ABS argument. Recall that, although ERG, DAT, and ABS arguments are all assumed to enter into Agree relations in the syntax (evidenced by their ability to be doubled by clitics, on the M-merger approach to clitic doubling presented in the next chapter), it is only the features of the ABS argument that appear on the anchor of AUX. When ABS doubled clitics appear (i.e., in 1st/2nd Person contexts), both Person and Number features are reflected in AUX agreement. When ABS doubled clitics are not generated, (i.e., 3rd Person or PCC contexts), only Number features are observed. This section addresses both scenarios.

As discussed above, the ABS DP Agrees with v_{ABS} , receiving Case and in turn valuing the uninterpretable features of the v head. Within the complex head that comprises AUX, ABS agreement is observed on v , as opposed to T.

(9)



Note that some approaches suggest that the internal argument raises to Spec, TP if there is no external argument¹⁰, as in intransitives. Rezac et al (2014) claim such movement to be motivated by EPP features on T. However, in order for this EPP feature to target the internal argument, T must be a Probe (and therefore, have unvalued, uninterpretable features). It is unclear as to why T should be able to target the internal argument, especially as the ABS Case feature is already valued. It suffices to say that the EPP-based motivation for internal argument movement suggests that the internal argument does not value the unvalued features on T that make it a Probe. I assume that this does not necessarily mean that the derivation crashes, but that and such features receive default (3rd Person singular) valuation (Preminger, 2014).

At this point in deriving ABS agreement on the anchor of AUX, the ABS clitic inventory becomes relevant. I claimed above that 1st and 2nd Person ABS arguments are doubled by clitics, but 3rd Person arguments are not, an analysis that will be fully motivated in the next chapter. The underlying assumption is that the /d/ observed in the AUX-initial ABS clitic position in 3rd Person contexts is not a doubled clitic, but is inserted post-syntactically to avoid violating a morphological prohibition on the position of T (Arregi & Nevins, 2008, 2012).

I account for this paradigmatic gap based on the interaction of several claims. First, regarding feature specification of the ABS DPs, I suggest that 1st/2nd Person ABS DPs are specified with Number [\pm plural] features and the Person features [\pm participant; \pm author]. In

¹⁰ The ABS argument may also Move to Spec, TP in some scrambling contexts; I leave the issue of scrambling in Basque aside here.

contrast, 3rd Person ABS DPs include only the Number feature [\pm plural]; they lack the Person feature [\pm participant] altogether. Second, I claim that the Phi Probe on *v* is split, with separate Person and Number Probes; the Person Probe is relativized (Preminger, 2014), exclusively seeking arguments with a Participant feature. Finally, clitic doubling is initiated by Agree with the Person Probe (Chapter 4). Thus, doubled clitics are only generated for arguments that include a Participant feature, i.e., 1st/2nd Person ABS DPs but not 3rd Person.

These assumptions, discussed further in Chapter 4, raise questions about the agreement features manifested on the anchor of AUX. Consider Table 1.

Table 1. Intransitive AUX paradigm

	SINGULAR	PLURAL
1 ST PERSON	n-aiz	g-ara
2 ND PERSON	z-ara	z-ara-te
3 RD PERSON	d-a	d-ira

Here, 1st/2nd Person ABS DPs are doubled by clitics on AUX and the anchor shows agreement in Person and Number. The agreement features on the second morpheme (the anchor) of the AUX forms in Table 1 can be explained as follows. With 1st and 2nd Person arguments, Agree relations obtain between the argument and both the Person and Number Probes. With 3rd Person arguments, there is no Participant feature and so the Person Probe does not Agree; this means that the 3rd Person anchor morphemes /a/ and /ira/ are representative of Number, only. The Person feature of *v* receives default valuation (which happens to be 3rd Person).

Failure of a Probe (e.g., Person on *v*) to Agree does not necessarily mean a derivation is doomed; Béjar & Rezac (2003) note that in French, the Person Probe fails to Agree with a higher DAT argument in ditransitives, but is blocked from Agreeing with the lower accusative (ACC) argument; meanwhile, the Number Agrees with the ACC argument. The lack of Person agreement is realized as default Person features on *v*. This is what is observed in Basque, too,

where agreement on the anchor of AUX (specifically on *v*) is always / \emptyset / in the 3rd Person, differing based on Number only.

Table 2. 3rd Person *v* agreement

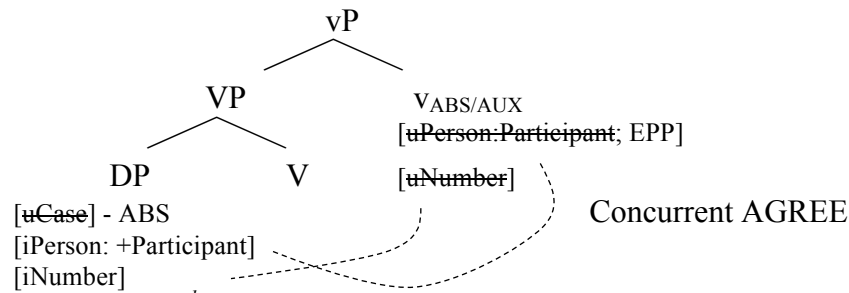
	SINGULAR	PLURAL
Intransitive	d- \emptyset -a	d-ir-a
Transitive (ERG = 3s)	d- \emptyset -u- \emptyset	d-it-u- \emptyset
Ditransitive (ERG/DAT = 3s)	d- \emptyset -i-o- \emptyset	d-izk-i-o- \emptyset

Preminger (2014) also demonstrates how failures of agreement do not necessarily mean that a derivation crashes. He argues that if Probes find Goals with features for which they are not ‘relativized’ (e.g., [participant] or [plural]), these otherwise eligible Goals can effectively be skipped until one is found that contains the desired features; if no such Goal can be found, default agreement emerges. This is the view adopted here, and in the case of the relativized Person Probe and 3rd Person ABS arguments, default features emerge.

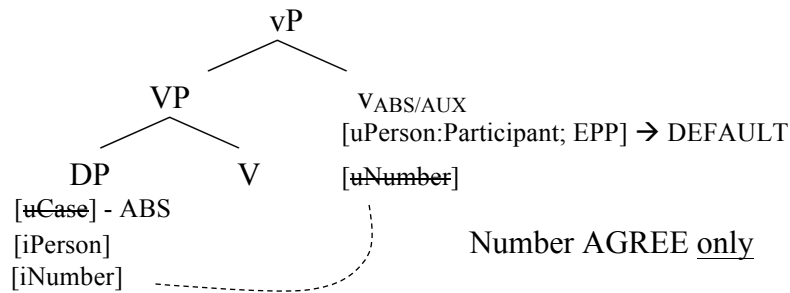
Another question raised by the separation of Person and Number Probes is one of order of operations. A commonly held view is that if Probes are split, the Person Probe will act before the Number Probe (Béjar & Rezac, 2003). However, when a doubled clitic is generated, it renders the doubled argument invisible to further agreement (Anagnostopoulou, 2003). If the Person Probe seeks a Goal first, Agrees with the ABS argument, and generates a doubled clitic, the Number Probe cannot Agree with the ABS DP; this would predict default Number features in 1st/2nd Person contexts, which is not observed. Thus, if these Probes are split, either Number needs to act before Person, or the two need to operate concurrently. At this point, I assume the latter, though I acknowledge that this is not a trivial issue, across languages or across analyses.

The structure in (10) shows the final *v*P configuration for Agree with the ABS argument.

(10) a. *Agree with 1st/2nd Person ABS arguments*



b. *Agree with 3rd Person ABS arguments*



Section 1 has offered an analysis in which ABS Case is assigned structurally, via Agree between v_{ABS} and the internal argument DP. Agree is somewhat restricted by the relativized Person Probe, which exclusively seeks arguments with Participant features; I claim that only 1st/2nd Person ABS DPs contain Participant features. ABS 3rd Person DPs lack a Participant feature, and thus do not Agree with the Person Probe. When Agree obtains, the features of the DP are reflected on the anchor of AUX (minimally Number, as well as Person if there is a Participant feature). The fact that 1st/2nd Person doubled clitics do not block Number agreement supports the view that separate Phi Probes act concurrently in Basque. This analysis facilitates the assumed 3rd Person gap in the ABS clitic inventory.

The analysis presented here remains unchallenged by unergatives, as ABS Case assignment is not requisite for ERG Case to appear and the agreement on the anchor of AUX can be explained as the default that arises when Agree fails. More challenging to the analysis were

constructions in which multiple ABS arguments appear despite there only being one v. In some cases, like in nominalizations, it was suggested that multiple vPs be involved and assign Case; where structural Case assignment is truly not possible, ABS features are assigned by default.

2 ERG arguments

ERG arguments canonically appear in subject position in transitive and ditransitive clauses; they are also seen as the subject of unergatives as shown in (4) above. ERG clitics doubling main clause subjects appear in AUX-final position, regardless of the argument's Person features.¹¹ Section 2.1 reviews how ERG Case is assigned, ultimately following a structural (Agree-based) approach. Section 2.2 explains the lack of ERG features on the anchor of AUX, despite the proposed Agree relation responsible for Case assignment; this is accomplished by dividing Agree into two operations, Agree-Link and Agree-Copy (cf. Arregi & Nevins, 2012).

2.1 ERG Case assignment

This section discusses the syntactic Case of transitive, ditransitive, and unergative subjects in Basque. Syntactic Case can be understood as a relationship between a DP and the rest of a clause, by which DPs are licensed to appear (Chomsky, 1981). Syntactic Case assignment can arise structurally or nonstructurally. Structural Case arises former through a syntactic relationship, assigned via Agree between a functional head and a DP argument with an unvalued, uninterpretable Case feature. Nonstructural case, which is arises due to lexical properties or theta positions (Woolford, 2006, p. 112), can be further divided into two types: lexical and inherent. Lexical Case is an idiosyncratic property, associated with Themes and internal arguments, and

¹¹ In some cases, a clitic doubling the features of the ERG argument can appear in the AUX-initial position of the ABS clitic; this phenomenon is called Ergative Displacement and is discussed in Chapter 5. Ergative Displacement is a post-syntactic process (Arregi & Nevins, 2012) and does not require any consideration in the syntax.

licensed by lexical heads while inherent Case is associated with external arguments and licensed by functional head.

A good deal of debate exists as to the status of ERG Case in Basque. For some, it is structural Case assigned by T (Laka, 1993a; Preminger, 2012; Rezac et al., 2014) while others argue for an inherent analysis due to its appearance on DPs in external argument position (Laka, 2006b; Woolford, 2006). Each of these approaches will be addressed in turn; ultimately, I will assume a structural analysis of ERG Case.

2.1.1 Structural analyses of ERG Case

This section begins by reviewing how ERG Case can be assigned structurally in the straightforward cases of monoclausal transitives and ditransitives. Consider the transitive sentence in (11).

- (11) a. Ni-k txakurra- \emptyset ikusi d-u-t
I-ERG dog-ABS seen L-have.3S-1S.ERG
'I have seen the dog'
- b. Ni-k zu-ri txakurra- \emptyset saldu d-i-zu-t
I-ERG you-DAT dog-ABS sold L-have.3S-2S.DAT-1S.ERG
'I have sold the dog to you'

In (11a), v_{ABS} assigns ABS Case to the internal argument (*txakurra* 'the dog'), allowing T to assign ERG Case to the external argument (*ni-k* 'I-ERG'). The situation is precisely the same in (11b), with structural ABS assigned to the direct object *txakurra* 'the dog' and T assigning ERG Case to the external argument via Agree. Specifically, T is a Probe that finds an eligible DP Goal in Spec, vP with an uninterpretable, unvalued Case feature. T Agrees with this DP, assigning it ERG Case.¹²

¹² Although I leave issues of scrambling aside, I suggest that ERG Case assignment would precede scrambling, meaning a scrambled DO would not intervene in this Agree relation.

As mentioned in Section 1, some accounts (Laka, 2006b, p. 379) take this order is fixed: ABS Case must be assigned in order for ERG Case to be assigned; this might provide an instant complication for true intransitive unergatives, which in Section 1 were claimed to lack an null internal argument (Preminger, 2012).

- (12) a. Jon-ek korri egin d-u- \emptyset
 Jon-ERG run do L-have.3S-3S.ERG
 ‘Jon has run’
- b. Jon-ek korritu d-u- \emptyset
 Jon-ERG run L-have.3S-3S.ERG
 ‘Jon has run’

(Hualde & Ortiz de Urbina, 2003, pp. 389–390:(#585a–b))

To account for (12b) structurally while maintaining that it is a true intransitive, we must move away from a dependent approach to Case; specifically, the proposal is that the *v* in unergative constructions is not a Case-assigning head, and therefore only ERG Case is assigned.

The detailed account of structural ERG Case assignment put forth by Rezac et al. (2014) offers such a proposal, ultimately suggesting that the functional heads *T* and *v* are active Case assigners some but not all contexts. First, they demonstrate that the *T* system is the source of ergativity, with ERG Case on subject DPs failing to arise when the *T* system is defective (e.g., in perception complement gerunds). In such constructions, ABS Case appears on the transitive subject of the perception complement gerund, assigned via Exceptional Case Marking (ECM) by the perception verb.

- (13) [Katu-ak sagu-ak harrap-tzen] ikusi d-itu-t
 [Cat-PL.ABS mouse-PL.ABS catch-ing] seen L-have.3PL-1S.ERG
 ‘I saw the cats catching the mice’

(Rezac et al., 2014, p. 1280:(#8))

Inversely, ERG marking appears on the subject of intransitives that raise to ERG position, as in (14).

- (14) Jon-ek eta Miren-ek; etorri behar d-u-te;
 Jon-ERG and Miren-ERG come must L-have.3S-3P.ERG
 ‘Jon and Miren must come’

(Rezac et al., 2014, p. 1290:(#21b))

Rezac et al. analyze examples like (14) as raising constructions, in which the verb *behar* ‘must’ introduces an infinitival complement (INF) where the subject originates. INF is considered a full vP but lacking T architecture, based on licensing facts (e.g., negation, temporal adjectives, independent subject licensing). Meanwhile, *behar* introduces a T that is able to assign ERG, but does not assign theta roles. Thus, when *Jon eta Miren* raises, it receives ERG Case from the T of *behar*.

However, Rezac et al. note some raising constructions in which the subject does not demonstrate ERG marking, but the form of AUX appears as though this subject is ERG.

- (15) Museo-ek/-ak geratu behar d-u-te kultur ondarea ez galtzeko
 Museum-ERG.PL/-ABS.PL remain must L-have.3S-3P.ERG culture heritage not lost
 ERG: ‘Museums [in general] must remain in order for cultural heritage not to be lost’
 ABS: ‘There must remain (some) museums in order for cultural heritage not to be lost’

(Rezac et al., 2014, p. 1299:(#32b))

Leaving the differences in interpretation aside, the data in (15) – the divergence between Case marking on the subject and the form of AUX – lead Rezac et al. to draw a distinction between ERG Case (i.e., the marker /-(e)k/ on the DP itself) and ERG agreement (i.e., the morpheme in the final position of AUX, in (15) /-te/).¹³ ERG agreement arises simply by virtue of Agree, but ERG Case marking requires Agree + Move to Spec, TP.¹⁴

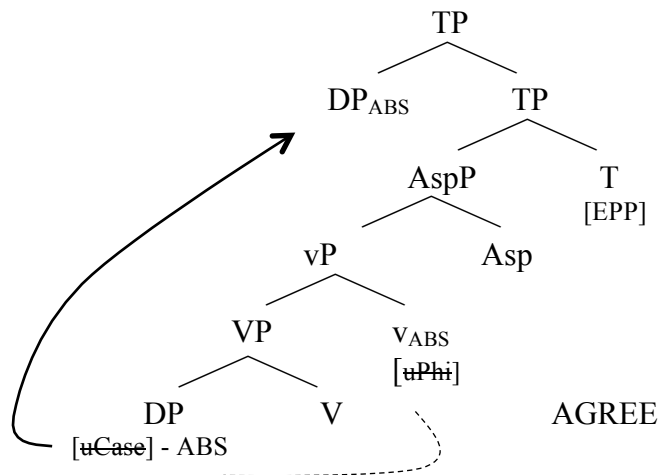
¹³ The morpheme that Rezac et al. term ‘ERG agreement’ is what I have been calling the ERG doubled clitic; they do not address the possible characterization of this morpheme as such.

¹⁴ Already, this has implications for an Agree-based approach to clitic doubling put forth later, which claims that a copy of the Agreed-with DP Moves to the specifier of the functional head with which it Agrees. At first glance, this seems incongruous with the proposal of Rezac et al.; this is addressed in Chapter 4.

I turn now to the specifics of implementing Rezac et al.’s proposal. The claim is that non-defective T is the source of ergativity, which is manifested as ERG agreement (a morpheme on AUX, and ERG Case (a morpheme on the DP). The former is a simple instance of Agree, while the later is a two-part operation of Agree + Move to Spec, TP. The examples below focus on the direct application of this proposal to single-clause intransitive, transitive/ditransitive, and true unergative sentences.

Rezac et al. provide structures for the first two of these. An intransitive is shown in (16), slightly modified to include more details of the clause structure.

(16)



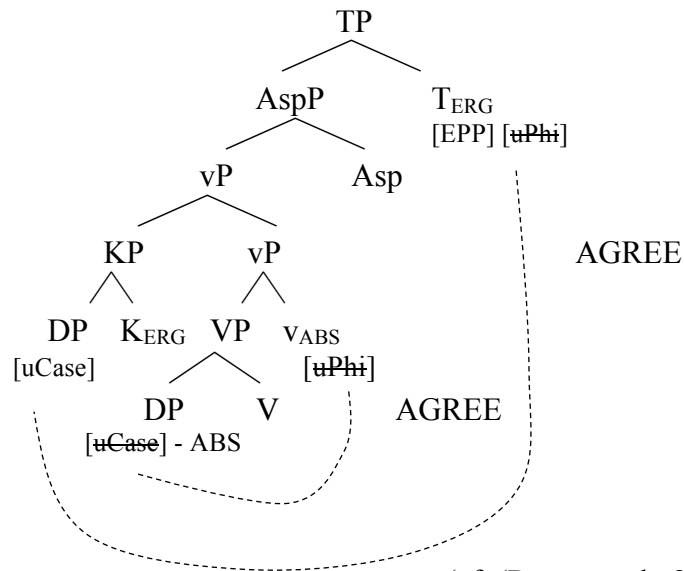
(cf. (Rezac et al., 2014, p. 1313:(#49b))

Rezac et al. (2014, p. 1314) consider ABS Case to be assigned structurally, via Agree with v_{ABS} . This Agree relation values an unvalued, uninterpretable Case feature on the internal argument, as discussed in Section 1 above. This is precisely what is seen in (16). Following the assignment of ABS Case via Agree with v_{ABS} , the internal argument then raises to Spec, TP to satisfy the EPP features of T. Critically, Rezac et al. make a distinction between the T that facilitates ERG Case/agreement (T_{ERG}), and one that does not (T). In unaccusative intransitives, it is the latter that appears. This is akin to the view put forth by Anand & Nevins (2006), who claim that while v is always a Case-assigning head in Basque, T is not (i.e., does not assign Case in intransitives);

predating Anand & Nevins, this is the claim of the Obligatory Case Parameter (Bobaljik, 1993; Laka, 1993b).

In transitives like (17), and by extension, in ditransitives, the external argument enters an Agree relation with T, while the internal argument Agrees with v.

(17)

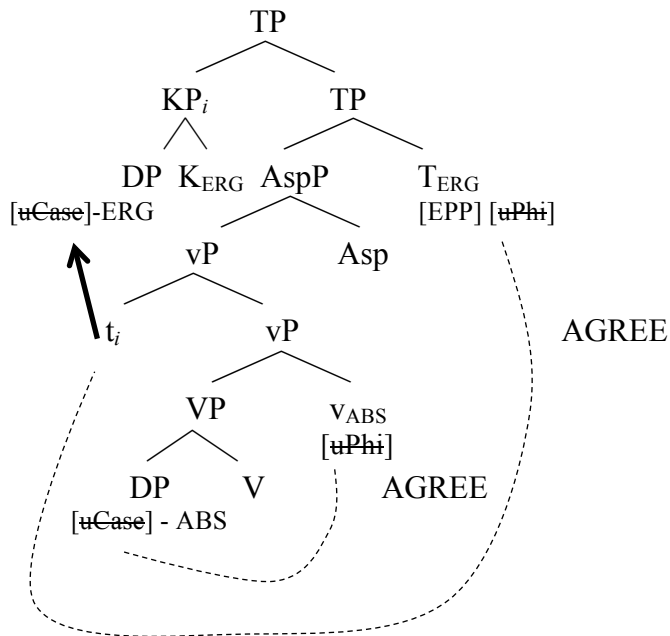


(cf. (Rezac et al., 2014, p. 1313:(#49a))

In (17), the internal argument Agrees with v_{ABS} and its uninterpretable Case feature is valued as ABS. Turning to the external argument, this Merges in Spec, vP as a KP headed by K_{ERG} , which selects a DP complement. The external argument enters into an Agree relation with T_{ERG} , valuing the uninterpretable Phi features of that Probe. Rezac et al. claim that this relationship is responsible for the appearance of ERG agreement (i.e., doubled clitics) on AUX, though the precise mechanisms by which doubled clitics are generated remain unexplored.

Subsequently, due to the EPP features of T_{ERG} , the KP and its DP complement raise to Spec, TP as shown in (18).

(18)



(cf. (Rezac et al., 2014, p. 1313:(#49a))

The involvement of KP (Bittner & Hale, 1996) in ERG Case assignment facilitates the split between ERG agreement and ERG Case. In essence, ERG Case only arises when selectional requirements of both T_{ERG} and K_{ERG} are satisfied. T_{ERG} requires that, if anything fills its specifier, it be K_{ERG} ; meanwhile, K_{ERG} is only licensed by subsequent movement to Spec, T_{ERG} . Thus, in examples like (15), the ERG Case marked example arises when Agree + Move with T_{ERG} occurs, while the ABS Case marked example ends with Agree with T_{ERG} as this argument does not Merge in the KP_{ERG} required for movement to Spec, T_{ERG} .¹⁵

Finally, consider true unergatives like (12b) under this proposal. Rezac et al. (2014, p. 1318) suggest that such an “island of nominativity” can be attributed to the parameterization of

¹⁵ This raises the question of why ERG doubled clitics cannot co-occur with ABS arguments in more simple cases, i.e., why a DP cannot Merge in Spec, vP without KP and remain *in situ* after Agreeing with T_{ERG} . In Chapter 4, I suggest that in split cases like (15), an expletive Merges in Spec, TP in lieu of moving the DP (as this DP does not Merge within a KP and therefore cannot Move to Spec, TP due to selectional restrictions). On this analysis, if the ERG clitic-ABS Case split were observed in simple transitives, this would require an expletive to Merge in Spec, TP with an external argument as its associate. Generally, expletives cannot take external arguments as associates, which predicts the inability of the ERG clitic-ABS Case split in simple transitives. Thanks are due to Omer Preminger for help with this analysis.

the Case loci $T_{\text{ERG}}/v_{\text{ABS}}$. While (16) and (17) above include v_{ABS} , notice that T_{ERG} is not included in intransitives. Similarly, true unergatives could be approached on the proposal that a non-Case-locus v (as opposed to v_{ABS}) appears in true unergatives. Table 3 shows a possible distribution of Case loci.¹⁶

Table 3. Distribution of Case loci¹⁷

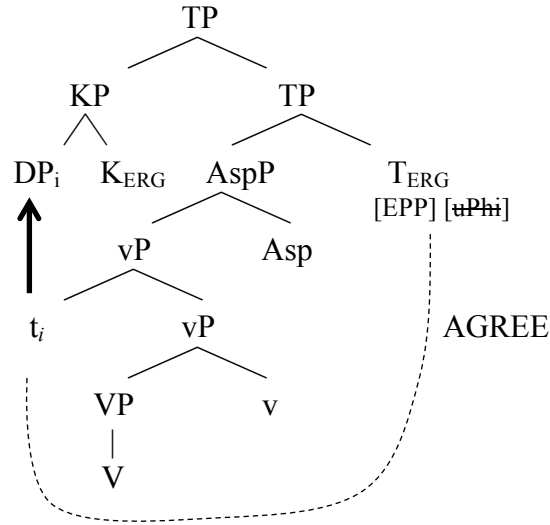
	T_{ERG}	T
v_{ABS}	Transitives, Ditransitives (ERG subject, ABS object)	Unaccusative intransitives (ABS subject, no object)
v	True unergative intransitives (ERG subject, no object)	Impersonal constructions; some reflexives (cf. Hualde, 1988)

On this view, there are two ‘flavors’ of functional heads v and T in Basque, and their various combinations yield the DP marking observed in Table 3. As far as what determines which head will appear, Rezac et al. (2014, p. 1318) appeal to the possibility of C-selection: “[i]f T can c-select particular $v(+V)$ as the head of its complement, Basque T_{ERG} could select for agentive v [(i.e., v_{ABS})], while excluding the agentive v of certain unergatives...”. Adopting this view, the following structure could apply for true unergatives.

¹⁶ A similar proposal was put forth in Siebecker (2014a), though the parametric distinction was the functional heads’ status as Probes wholesale, not just their potential as Case loci.

¹⁷ The claim here is that the Case assignment abilities of Probes are parametrized in Basque; this suggests that they are parameterizable in other languages as well. This requires further typological investigation, but several patterns are logically possible. These possibilities are explored by the Obligatory v case Parameter and Obligatory T case Parameter proposed by Anand & Nevins (2006) with the following cross-linguistic examples: languages in which neither v nor T is *ever* a Case assigning head (e.g., Hindi, and on this analysis, Basque, though this diverges from Anand & Nevins’ analysis of Basque), those that require T to remain consistent while v alternates (e.g., English), those that require v to remain consistent while T alternates (e.g., Nez Perce), and those in which both v and T consistently assign Case (unattested, would require a language with only transitive verbs).

(19)



Agree between T_{ERG} and the external argument proceeds as in (17), resulting in ERG agreement on AUX and ERG Case on the DP by virtue of the movement to Spec, TP. The structure lacks an internal argument altogether (Preminger, 2012), and there is no issue of potential Case assignment competition as v is not a locus for Case assignment (and avoids issues of ERG being dependent case assignment).

This is the analysis of structural ERG Case assignment that I will adopt moving forward. However, before proceeding to issues of agreement on the anchor of AUX, I briefly review where an inherent Case approach to Basque falls short.

2.1.2 Inherent analysis of ERG Case

Laka (2006b, p. 380) writes, “[m]ost data on case assignment in Basque are not informative on the issue of whether structural or inherent in this language: both structural and inherent approaches can explain the case patterns that arise in this grammar.” For the simple cases of di/transitives and true unergatives reviewed in (16) – (19), it seems plausible for ERG Case to be assigned inherently to DPs that Merge in Spec, vP.

For example, Woolford (2006) claims that nonstructural (inherent) Case trumps the assignment of structural Case via Agree on subjects in external argument position. To illustrate this in Basque, she compares true unergatives (20a) and unaccusative intransitives (20b).

- (20)
- a. Gizona-k kurrITU d-u-ø
 Man-ERG run L-have.3S-3S.ERG
 ‘The man has run’
 - b. Ni etorri n-aiz
 1S.ABS come 1S.ABS-be.1S
 ‘I have come’

(Woolford, 2006, p. 122:(#27-28), cf. Levin, 1989)

In (20a), the subject of the unergative intransitive *Merges* in external argument position (Hale & Keyser, 1988), and obtains ERG Case. Woolford argues that the structurally assigned Case expected in this position is nominative (NOM), which is prevented from being assigned since this position is pre-designated for ERG Case. In contrast, (20b) shows an unaccusative intransitive, whose subject is an internal argument. Since this subject does not Merge in the external argument position, it does not receive nonstructural ERG Case and can receive NOM Case structurally via Agree. However, on the approach advanced here where the Case of internal arguments is ABS, not NOM, this analysis does not prove that ERG Case is structural. Indeed, as the case on the internal object in (20b) is ABS assigned by *v*, and *v* cannot assign Case to the external argument positions, it is completely expected ABS Case not surface on the external argument subject in (20a).

The evidence that Laka (2006b) cites for an inherent analysis of ERG over a structural one is based on the relationship between theta roles and ERG Case marking. She suggests that thematic roles cannot be completely divorced from ERG Case in Basque, taking this as indication that ERG Case on external arguments is nonstructural and inherent. Specifically, she

claims that ERG arguments are never Themes. At first glance, this seems to hold true for true unergatives, as in (12b) and (20a), allowing them to receive ERG Case inherently by Merging in Spec, vP, the position for agentive subjects. However, numerous counterexamples to this claim exist, in which an argument with the role Theme surfaces with ERG Case. This dissociation appears in simple transitive structures, as in (21).

- (21) a. [Liburua- \emptyset irakur-tze-n] saiatu d-ira
 [book-ABS read-NMZ-LOC] tried L-be.3P
 ‘They tried to read the book’
- b. Ura-k irakin d-u- \emptyset
 water-ERG boil L-have.3S-3S.ERG
 ‘The water has boiled’

(Preminger, 2012, p. 284:(#14))

The data in (21a) shows an Agent ABS subject, and (21b) shows ERG on a Theme, contra Laka’s claim.

Further, the very possibility of raising to ERG, as discussed by Rezac et al. (2014) above is not predicted when ERG Case and thematic role are related; for example, in (15), the raising verb *behar* does not assign a thematic role to its raised subject. Further examples of the challenge of raising constructions for the thematic role-ERG Case correlation are offered by Artiagoitia (2001), who shows that a raised subject appears as ERG despite the position to which it raises not being assigned a thematic role.

- (22) a. Jon nekatuta d-ago-ela {ematen d-u- \emptyset / d-irudi- \emptyset }
 Jon.ABS tired L-root-that {seem L-have.3S-3S.ERG / L-seem-3S.ERG}
 ‘It seems that Jon is tired’
- b. Jon-ek nekatuta d-ago-ela {ematen d-u- \emptyset / d-irudi- \emptyset }
 Jon-ERG tired L-root-that {seem L-have.3S-3S.ERG / L-seem-3S.ERG}
 ‘Jon seems that (he) is tired’

(Artiagoitia, 2001, pp. 4:(#8–9))

In (22), *Jon(-ek)* is the subject of the same small clause, despite its appearance with ABS or ERG marking. Clearly, the ERG marking in (22b) does not render *Jon-ek* an Agent. Thus, the correlation between thematic role and ERG Case that substantiated Laka’s analysis of ERG Case as inherent is tested by numerous counterexamples. The analysis proceeds assuming that ERG Case is assigned structurally, and adopting Rezac et al.’s distinction between ERG agreement (i.e., clitic doubling) requiring simple Agree, while ERG Case marking requires the external argument to Merge within KP and that KP+DP Move to Spec, TP post-Agree.

2.2 (Lack of) Anchor agreement with ERG argument

The previous section adopted the analysis of structural ERG Case assignment put forth by Rezac et al. (2014). Recall that on their analysis, ERG agreement (i.e., the ERG doubled clitic) on AUX is the result of the simple valuation of the uninterpretable Phi features on T_{ERG} . However, as put forth in Chapter 2, the analysis of AUX for which I ultimately advocate somewhat differs from this view. Specifically, I propose that transitive AUX consists of (possibly) an ABS doubled clitic, the ‘anchor’ (composed of v and T) and an ERG doubled clitic:

(23) D.ABS – v_{ABS} – T_{ERG} – D.ERG

Thus, on an approach to Case where the Phi features on T are valued, it should be explained why it is only the features of the ABS argument (Number, and Person in 1st/2nd Person contexts) that appear on the anchor of AUX, as in (24).

(24) Gu-k zu ikusi z-ait-u-gu dend-a-n
 We-ERG you.SG-Ø seen 2S.ABS-have.2S-T-1P.ERG store-the-in
 ‘We have seen you in the store’

In (24), the anchor head v shows agreement with the ABS argument *zu* ‘you’ with which it Agrees in the syntax; however, no such agreement is observed on T_{ERG} , which Agrees with the ERG argument *gu-k* ‘we-ERG’. This is not to say that all instances of agreement require

morphological exponence. However, it is noticeable, in a language with such robust agreement, that a Probing head never shows inflection for the Phi features of its Goal. This is what is observed for Basque T_{ERG} , and this section explores why this might be so.

One way to account for the lack of ERG agreement features on T_{ERG} would be to appeal to morphological economy, proposing that multiple sets of Phi features should not appear on the same complex head (Kinyalolo, 1991). For Basque, such a constraint would entail that both ABS and ERG features should not appear on complex T, even though they are housed separately on v_{ABS} and T_{ERG} ; it is unclear, however, what would motivate the appearance of ABS agreement morphology of v_{ABS} over features of the ERG argument on T_{ERG} . An alternative view from the morphological economy perspective points out that it is more common, cross-linguistically, for only doubled clitics to surface, not both agreement and the doubled clitics (Kramer, 2014; Preminger, 2011a). However, the co-occurrence of valued Phi features on an Agreeing functional head and a doubled clitic is not unattested, as shown for West Flemish.

(25) da-n-k ik komm-en¹⁸ [West Flemish]
 that-1S-I_{CL} 1S.NOM come-1S
 ‘that I come’

(Rezac, 2008a, p. 91:(#8))

Thus, there is no obvious structural prohibition on the co-occurrence of a doubled clitic and agreement morphology, and as above it would be unclear why an ABS doubled clitic and agreement morphology could co-occur but ERGs could not.

The solution involves a finer-grained approach to the Agree operation. Instead of positing that Agree is a one-fell-swoop operation in which a Probe seeks a Goal and immediately has its

¹⁸ Note that Hageman & van Koppen (2012) call into question feature dependency in complementizer agreement, but their analysis deals agreement with the same argument by a complementizer and a finite AUX (i.e., on two distinct Probes), while Rezac looks at agreement morphology plus a doubled clitic on a complementizer.

features valued, I take the approach suggested by Arregi & Nevins (2012) and divide Agree into two steps: Agree-Link, and Agree-Copy. These operations are defined as follows.

(26) *Agree-Link*

A syntactic operation in which a Probe establishes an Agree relation with a Goal, based on hierarchical relations and locality

(27) *Agree-Copy*

A post-syntactic operation in which the Phi features of the Goal are copied onto the Probe

(Arregi & Nevins, 2012, pp. 7–8)¹⁹

With this division of labor in the Agree operation, it can be assumed that only the syntactic component of Agree (Agree-Link) is necessary to facilitate clitic doubling (and Case assignment). Agree-Copy, which determines whether or not an Agree relation will be morphologically realized, is responsible for the appearance of Phi features on the anchor of AUX.

To explain the appearance of an ERG doubled clitic and the absence of ERG inflection on T_{ERG} , I propose that T_{ERG} Agree-Links with the ERG argument in the syntax, allowing a doubled clitic to arise via M-merger, but Agree-Copy does not occur in the Morphological Structure (at MS). The question arises as to why ABS arguments both Agree-Link and Agree-Copy while ERG arguments only Agree-Link. That is, what about the Agree relation between v_{ABS} and the ABS Goal differs from the Agree relation between T_{ERG} and the ERG?

¹⁹ This notion exhibits some similarities with the model of alliterative concord put forth by Dobrin (1995), who writes, “...the role of morphology in Bainuk agreement is merely to provide a window of a specified size and placement through which the syntax may look to retrieve the appropriate agreement features.” For Dobrin, agreement is not restricted to a single module of the grammar but rather requires communication between the syntax and the phonological form (via the morphological component). Similarly, the proposal here does not hold a single module of the grammar responsible for agreement; unlike Dobrin’s proposal, however, the Agree-Link/Agree-Copy distinction does not have any reliance on phonological form (which is expected in DM). Further, morphological information does not feed the syntactic representation in determining the agreement features that will appear.

First, the functional head that constitutes the Probe could be considered: perhaps there is some constraint that prevents features from being Agree-Copied on to T_{ERG} . This alternative is ruled out when the DAT is considered; I suggest later that DAT arguments Agree-Link with v_{ABS} , but DAT features are not Agree-Copied, either (Section 3). Thus, the same morphological effect is being observed on both v_{ABS} and T_{ERG} , indicating that it is not the nature of the Probe (T_{ERG}) that is responsible for the lack of ERG inflection (particularly since v is capable of showing (ABS) inflection).

An alternative is to appeal to theories of morphological agreement to determine when Agree-Copy can apply. Bobaljik (2008) suggests, following Marantz (1991), that syntactic Case can and should be separated from morphological case assignment, and that morphological case provides a hierarchy by which agreement can be determined:

- (28) Unmarked Case > Dependent Case > Lexical/Oblique Case²⁰
 (Bobaljik, 2008, p. 303:(#13))

This hierarchy influences agreement as follows:

- (29) The controller of agreement on the finite verbal complex (Infl + V) is the *highest accessible* NP in the *domain* of Infl + V.
 (Bobaljik, 2008, p. 296:(#3))

Thus, for Basque, the cutoff point for accessibility for Agree-Copy needs to be established. On the null assumption that all arguments are accessible, agreement with the structurally highest would appear on the anchor of AUX. For transitives, ditransitives, and true unergatives, this would be the ERG argument; for applicative intransitives, the DAT; for intransitives, the ABS argument. This is not what is attested – anchor agreement only represents ABS arguments.

²⁰ For Basque, Bobaljik indicates unmarked case is ABS, dependent case is ERG, and lexical/oblique case is DAT.

The data suggest that the cutoff point for accessibility for Basque is unmarked case – only ABS arguments (the first on the hierarchy of accessibility) are eligible for Agree-Copy. Thus, even when there is another, structurally higher argument (ERG or DAT), the features of the ABS argument will Agree-Copy. In this regard, Basque patterns like Hindi, where the unmarked case controls agreement, even if there is a structurally higher argument:

- (30) a. *siitaa kelaa khaatii thii*
 Sita.Ø.FEM banana.Ø.MASC eat.IMPF.FEM be.PST.FEM
 ‘Sita (habitually) ate bananas’
- b. *raam-ne roṭii khaayii thii*
 Ram-ERG(MASC) bread.Ø.FEM eat.PF.FEM be.PST.FEM
 ‘Ram had eaten bread’

(Bobaljik, 2008, p. 309:(#22a,c))

In (30a), when both arguments have unmarked case, the structurally higher argument controls agreement; in (30b), the unmarked argument still controls agreement, even when it is not the highest argument structurally.

In unergatives, then, where there is no ABS argument to be accessed for agreement, it is expected for AUX to surface with default (3rd Person singular) agreement features. This is precisely what is observed.

- (31) a. *Ni-k korritu d-u-t*
 I-ERG run L-have.3s-1S.ERG
 ‘I have run’
- b. *Gizon-ek korritu d-u-te*
 Man-P.ERG run L-have.3s-3P.ERG
 ‘The men have run’

In (31), the anchor of AUX maintains apparent 3rd Person singular (default) agreement features, despite the 1st Person singular (in (31a)) and 3rd Person plural (in (31b)) subjects.

Icelandic also shows that agreement is limited to the unmarked (i.e., NOM) case, with no lower cases accessible, and that default features emerge in verbal agreement when there is no accessible target. In (32), both subject and object receive quirky DAT Case, but verb agreement is default (3rd Person singular).

- (32) a. Strákarnir leiddust/*leiddist
the.boys.NOM.P walked-hand-in-hand(3P/*3S)
‘The boys walked hand in hand.’
- b. Strákunum leiddist/*leiddust
the.boys.DAT.P bored(3SG/*3PL)
‘The boys were bored.’

(Sigurðsson, 1996, pp. 1:(#1–2))

In (32a), the subject *strákarnir* ‘the boys’ receives NOM Case and thus the verb appears with the plural features of that argument. In contrast, when the same verb (*leidd-*) assigns quirky DAT Case (changing the meaning), agreement with *strákunum* ‘the boys’ is prohibited and singular features emerge on the verb.

Thus, Agree-Copy is not possible with ERG or DAT arguments because Basque, like Hindi and Icelandic, limits accessibility on the m-case hierarchy to unmarked case (ABS Case) only. If no accessible argument exists, then default features appear; this is observed in Basque unergatives and in Icelandic quirky case constructions.

Section 2 has reviewed the analysis for ERG Case assignment that will be adopted here, which is that of Rezac et al. (2014). On this analysis, ERG agreement (i.e., doubled clitics) is distinct from ERG Case assignment: the former is the result of Agree between the external argument and T_{ERG} , which the latter results from Agree + Move to Spec, T_{ERG} , which contains a K_{ERG} . Thus, ERG Case assignment is structural. True unergatives, which Preminger (2012) demonstrates do not have a null direct object, initially present a challenge for structural analyses

of ERG Case in which the assignment of ERG is dependent on the prior assignment of ABS; this is accounted for on the Rezac et al. approach by the notion that Case loci are parameterized (see also Anand & Nevins, 2006), and that just as T_{ERG} does not arise in intransitives, v_{ABS} does not arise in true unergatives.

Subsequently, the lack of ERG agreement morphology on the anchor of AUX was addressed. By splitting the Agree operation into a syntactic component (Agree-Link) and a morphological component (Agree-Copy), following Arregi & Nevins (2012). However, Arregi & Nevins limit Agree-Copy by stipulation; here it was suggested that the limitations of Agree-Copy could find support by appealing to a hierarchy of agreement accessibility, as proposed by Bobaljik (2008). By limiting accessibility for post-syntactic agreement (i.e., Agree-Copy) to unmarked case, only ABS agreement is expected on the anchor of AUX, which is precisely what is observed. This proposal will be further detailed in Chapter 5. The following section turns to case and agreement with DAT arguments.

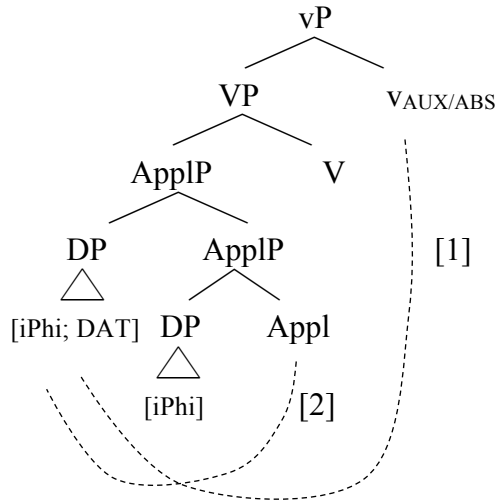
3 DAT arguments

This section turns to DAT arguments, analyzing DAT Case as inherent (Section 3.1). Despite this, DAT doubled clitics on AUX suggest that this argument does participate in Agree relations; this is explored in Section 3.2, detailing how the Agree relation arises, and how this interacts with the ABS Agree relations in ditransitives (Section 3.2.2) and applicative intransitive (Section 3.2.3).

3.1 DAT Case is inherent

It is widely claimed that DAT Case is nonstructural and inherent (Woolford, 2006). Consider the options for structural Case assignment via Agree, shown in (33).

(33)



It could be proposed that *v* assigns DAT Case, indicated with [1] above, but this leaves no avenue for structural ABS Case assignment. Alternatively, it could be proposed that DAT Case is assigned via Agree with Appl as indicated with [2] above, but it seems unlikely that Appl could assign Case to the argument in its Specifier, especially since it would have to do so over its own DP complement, which is caseless before *v* Merges and Agrees with it.

Another alternative is that the DAT is assigned as a dependent morphological case, modifying the proposals of Marantz (1991, 2000), as suggested for the DAT in Sakha by Baker & Vinokurova (2010). To do so, a rule would have to posit if two DPs appear in the same domain (here, *vP*-internally), the lower DP would receive structural (ABS) Case and, dependent on this assignment, the higher DP would receive DAT case in the morphology. The claim of DAT Case assignment in the morphology is compatible with the *m*-case analysis proposed to account for the limitation on Agree-Copy above. However, the Baker & Vinokurova approach raises a question: what mechanisms ensure that the rule assigning structural Case to the lower DP over a higher, Case-less DP are observed? Even if *v* is understood to Agree simultaneously with all eligible Goals, it is not clear how the Case consequence of the Agree operation could be tempered.

The conventional approach is that DAT Case is inherent Case given to the argument Merged in Spec, ApplP. Rezac (2008a) assumes this for the Basque DAT. This is also the claim of Woolford (2006), who cites the co-occurrence of DP goals with dative case, as well as the fact that DAT subjects can appear with NOM (=ABS) objects. Although I do not rule out the validity of alternative DAT Case assignment analyses, going forth, I assume that DAT is assigned inherently to the argument that Merges in Spec, ApplP (cf. Cuervo, 2003 for Spanish, Rezac, 2008a for Basque).

3.2 Agree(ment) with DAT arguments

The morphology of the ditransitive AUX suggests that both internal arguments, the DAT indirect object and the ABS direct object, need to enter into an Agree relation, the former to be doubled by a clitic via M-merger and the latter to ensure Number agreement²¹ on the anchor of AUX. However, assuming that the needs of T are satisfied via Agree-Link with the ERG external argument, there is only one functional head eligible for Agree: *v*.²² It has already been claimed that *v* enters into an Agree-Link relation with the ABS argument, Probing separately but concurrently for Number and Person (relativized for Participant).

When DAT and ABS arguments co-occur, *v* needs to Agree-Link with both. The claim is that the Agree-Link operation needs to be reconceptualized as not a sequential operation but one in which a Probe Agree-Links with all eligible Goals within its domain. This modification has been proposed as Multiple Agree (Hiraiwa, 2000), and is proposed to hold in Basque by Arregi & Nevins (2012). In structures with both DAT and ABS arguments, two questions arise: first, as DAT Case is assumed to be inherent and thus theta-related (Woolford, 2006), it should be

²¹ Recall that no Person features are represented on the anchor of AUX in ditransitives, and instances of the PCC.

²² I assume that Appl is not a Probe and is therefore ineligible to participated Agree.

subject to Case Opacity and not eligible for Agree (e.g., Chomsky, 2000; cf. Rezac, 2008a); second, in most contexts where DAT and ABS arguments co-occur within a clause, PCC effects are observed meaning that only 3rd Person ABS arguments can appear. The first issue is taken up in Section 3.3.1, which reviews Rezac’s (2008a) regarding the ability of the DAT to Agree with *v* in Basque. Sections 3.2.2 and 3.2.3 examines two situations in which DAT and ABS arguments co-occur: ditransitives and applicative intransitives, respectively, and in both contexts works to derive observed PCC effects.

3.2.1 Agree between DAT and *v*

Rezac (2008a) notes that while DAT arguments are unable to serve as targets for Agree in many languages, this does not seem to hold in Basque. He cites the appearance of DAT clitics on AUX as evidence of Agree between *v* and the DAT argument, suggesting that:

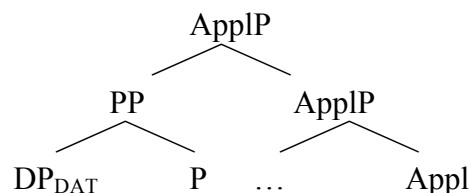
The Phi-probe of *v* enters into a non-valuing relation with the quirky Case dative, displaces a D-like head (alone or part of a larger DP), and then continues to Agree with the next lower DP to which it assigns absolutive.

(Rezac, 2008a, p. 98)

The theory put forth for clitic doubling in the following chapter relies precisely on such a characterization of the relationship with between *v* and the DAT, and spells out the displacement process that Rezac mentions. Thus, in the remainder of this section I give a brief overview of Rezac’s proposal for Agree between the DAT and *v*, which I will adopt going forward.

As described above, the DAT argument receives inherent Case from Merging in Spec, ApplP. What Rezac suggests is that DAT DPs Merge as a PP in Spec, ApplP, as in (34).

(34)



Relying on the parallelism between the CP and PP, Rezac proposes that P varies parametrically depending on whether it is a Phi Probe. In languages where DAT arguments are not involved in Agree, P is not a Probe; in languages like Basque, where DAT Agree seems evident, P is a Probe, and finds its DP complement as a Goal. Thus, the uninterpretable features of the Probe on P are valued. When P is a Probe valued by the DAT argument, it in turn can serve as a Goal for the Probe(s) on *v*, as they are in the same phase and thus the uninterpretable features of P are not deleted, making them visible to *v*. In this way, the features of the DAT argument are syntactically accessible to *v*; the specifics of how the DAT is manifested as a doubled clitic on AUX are presented in the following chapter.

3.2.2 DAT agreement in ditransitives

In (35), two ditransitives are shown.

- (35) a. Zu-k ni-ri liburua saldu d-i-da-zu
 You-ERG me-DAT book.ABS sold L-have.S-1S.DAT-2S.ERG
 ‘You have sold the book to me’
- b. *Zu-k harakina-ri ni saldu n-ai-o-zu
 You-ERG butcher-DAT me.ABS sold 1S.ABS-have.1S-3S.DAT-2S.ERG
 ‘You have sold me to the butcher’

(Laka, 1996, sec. 2.2.4:(#48))

In (35a), a 3rd Person ABS direct object is used and the sentence is grammatical; in (35b), the 1st Person ABS direct object renders the sentence ungrammatical. This is an effect of the PCC, defined for Basque in (36).

- (36) *Person-Case Constraint (Basque)*
 Only a 3rd Person ABS argument can appear in the presence of a DAT argument.

The PCC²³ as formulated in (36) is merely descriptive; it does not offer an indication as to what underlying restriction(s) cause this effect to be observed.

The structure for ditransitives needs to be able to account for (i) lack of DAT agreement inflection on the anchor of AUX; (ii) DAT doubled clitics; (iii) PCC effects (i.e., lack of ABS doubled clitics); and (iv) ABS agreement on the anchor of AUX limited to Number only.

Concerning (i), the theory of limited accessibility for agreement put forth above works here as well to prevent the manifestation of DAT inflection on the anchor of AUX, despite the (indirect) Agree relation with *v* proposed in Section 3.2.1 above. Further, regarding the relation between *v* and the DAT, recall that this is mediated by P, which Agrees with the DAT DP and subsequently serves as the Goal for Agree with *v*. Rezac (2008a) suggests that this prevents the DAT from controlling agreement on *v*. Thus, there are two mechanisms by which DAT features are prevented from appearing on the anchor of AUX.

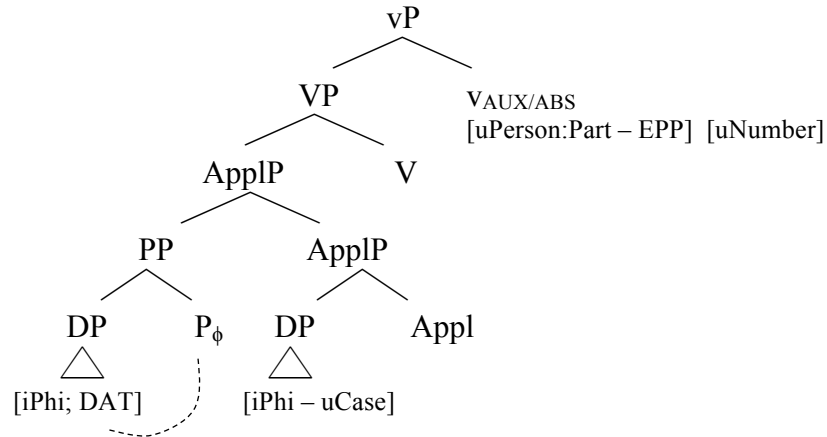
Regarding (ii), the M-merger process by which DAT doubled clitics are generated is fully explained in Chapter 4. For now, it suffices to say that clitic generation requires an Agree relation with *v*, which is satisfied by the *v*-DAT relation mediated by P.

Finally, (iii) and (iv) are related – the analysis needs to prevent all ABS clitic generation, which would suggest Agree with *v* is blocked, yet ABS Number features need to appear on the anchor of AUX, which suggests Agree is required *v*. The remainder of this section addresses this puzzle in ditransitive constructions.

Recall from Chapter 2 the structure proposed for ditransitive clauses, the *v*P for which is shown with more featural detail in (37) below.

²³ This is an instance of the so-called ‘strong PCC’, which contrasts with its weaker counterpart that restricts ordering of certain elements based on their feature content (Nevins, 2007).

(37)



In (37), internal arguments are introduced via ApplP. The indirect object Merges within a (Phi-Probe) PP in Spec, ApplP where it receives inherent DAT Case and values the Phi features of the PP; the direct object argument Merges as the complement of Appl. Notice that the direct object has an uninterpretable, unvalued Case feature.

Recall that ditransitives are not acceptable unless the direct object (ABS) argument is 3rd Person. To account for these PCC effects, I extend the analysis of PCC effects in Kiowa (Kiowa-Tanoan, Oklahoma, United States) by Adger & Harbour (2007). Adger & Harbour propose that in Kiowa, Appl needs to ensure a DAT argument in its specifier, and that its only avenue to do so is via Agree. Thus, they claim that Appl contains a Person Probe that is relativized to seek a Participant feature, much like I have proposed for v. This Probe first encounters the DP complement of Appl, but it cannot be the case that Appl Agrees with it (and still continues Probing); therefore, this argument must lack a Participant feature (i.e., be 3rd Person).

The Person Probe on Appl must continue to search past its complement and find the DAT argument in Spec, ApplP, and the two enter into an Agree relation. In Basque, this is straightforward when the DAT argument is 1st or 2nd Person. However, a two-part challenge arises when the DAT argument is 3rd Person: first, Agree needs to arise with the Appl head.

Second, unlike the ABS, 3rd Person DAT clitics are attested (/o/), and therefore need to Agree with the Person Probe of v.

In order to ensure that the DAT argument can Agree even when it is 3rd Person, Adger & Harbour appeal to the nature of feature valuation. They claim that there are three options for Phi features: the feature can be included, and valued (e.g., 1st Person includes a [+participant] feature); the feature can be absent (e.g., the Participant feature on ABS 3rd Person arguments); or the feature can be included but unvalued. They claim that in DAT arguments, the Participant feature *is* included, and receives a negative value (i.e., [-participant]). The negative Participant feature receives support from animacy restrictions on the DAT: only animate DAT indirect objects are permitted, and a negatively-valued Participant feature correlates to a [+animacy] distinction. Some speakers indicate a strong preference for DAT arguments to be animate in Basque:

(38) a. *Possible: Inanimate indirect object in ditransitives*

??/* Jon-ek liburua liburutegia-ri eman d-i-o-ø
 Jon-ERG book.ABS library-DAT given L-have.S-3S.DAT-3S.ERG
 ‘Jon has given the book to the library’

b. *Preferred: Detransitivization with post-position*

Jon-ek liburua liburutegi-ra eramán d-u-ø
 Jon-ERG book.ABS library-TO.INANIM taken L-have.3S-3S.ERG
 ‘Jon has taken the book to the library’

In (38a), the indirect object *liburutegia* ‘the library’ is observed with a DAT Case marker, and AUX surfaces with a DAT clitic (*d-i-o-ø*); speakers found this sentence very difficult to interpret, if not rejecting it outright. In contrast, when *liburutegia* is observed with the postposition /ra/ ‘to’ as in (38b), the result was acceptable. Here, AUX is in its transitive form,

with no clitic doubling *liburutegia*. These data are suggestive of an animacy restriction for DAT arguments in ditransitives.²⁴

Claiming that 3rd Person DAT arguments include a negatively-valued Participant feature resolves both of the issues mentioned above: the DAT can now Agree with the relativized Appl Person Probe, and it can also be targeted (via P) for Agree by v which results in 3rd Person DAT clitics. However, the Participant feature of the DAT must be contrasted with that of the ABS argument. Recall that in Section 1, it was claimed that direct object internal arguments lack a participant feature altogether – the consequence being the absence of 3rd Person clitics, since this argument could not Agree with the EPP-feature-bearing relativized Person Probe of v. This is precisely what is suggested for Kiowa by Adger & Harbour (2007, p. 37:(#92)) – that 3rd Person direct object DPs lack a Participant feature, while 3rd Person indirect object DPs include a negatively-valued Participant feature.

The Adger & Harbour analysis does offer an Agree-based motivation for PCC effects, although the claim that selectional requirements can only be ensured through Probe-Goal relations is curious. It seems as though such requirements can be included in the information that comes with the ApplP when it is Merged, in the fashion that selectional restrictions are usually enforced; further, it is questionable whether Probes are able to look into their own specifiers when their needs are not met in their c-command domain (though such Probing is suggested by e.g., Béjar & Rezac, 2009). Thus, I suggest that DATs are included because ApplP selects that an argument with a Participant feature be Merged in the PP of its specifier, and that this argument receives inherent DAT Case from this Merge.

²⁴ Further, (37) suggests a way to characterize the possibility of P being a Phi Probe: when P is overtly realized in Basque, as in (37b), it is not a Phi Probe, but when it is phonologically null, it can Probe the DP it selects, as in (37a).

A final question arises about ABS arguments in ditransitives. So far, the analysis put forth here does not explain the PCC effects observed in Basque. Recall that ABS arguments must be 3rd Person (lacking a Participant feature), while 1st/2nd Person ABS arguments are prohibited. This is shown in (35) above, repeated as (39) here.

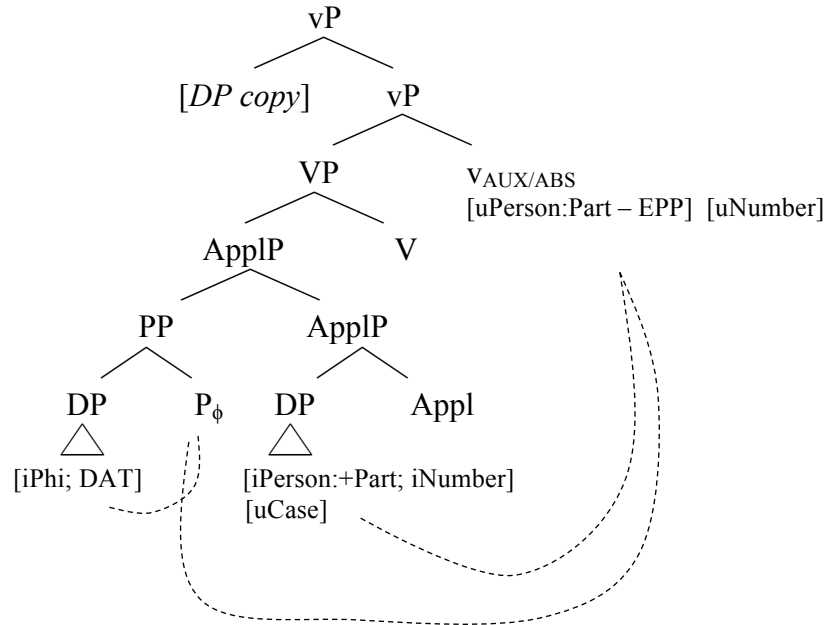
- (39) a. Zu-k ni-ri liburua saldu d-i-da-zu
 You-ERG me-DAT book.ABS sold L-have.S-1S.DAT-2S.ERG
 ‘You have sold the book to me’
- b. *Zu-k harakina-ri ni saldu n-ai-o-zu
 You-ERG butcher-DAT me.ABS sold 1S.ABS-have.1S-3S.DAT-2S.ERG
 ‘You have sold me to the butcher’

(Laka, 1996, sec. 2.2.4:(#48))

There are two potential avenues for handling this prohibition, on the analysis proposed here. First, it could be attributed to selectional restrictions, just as DPs with negatively-valued Participant features are forced to appear in Spec, ApplP. This is simple, but stipulative.

Second, a more structurally-based analysis could be proposed. This approach appeals to the subsequent Agree relation with *v*. Recall that another benefit of the negatively-valued Participant feature on the DAT was that this facilitated Agree-based clitic doubling with 3rd Person arguments, which was impossible with ABS arguments that lack a Participant feature. However, consider the structure that would result if the ABS argument in ditransitives were able to be 1st/2nd Person.

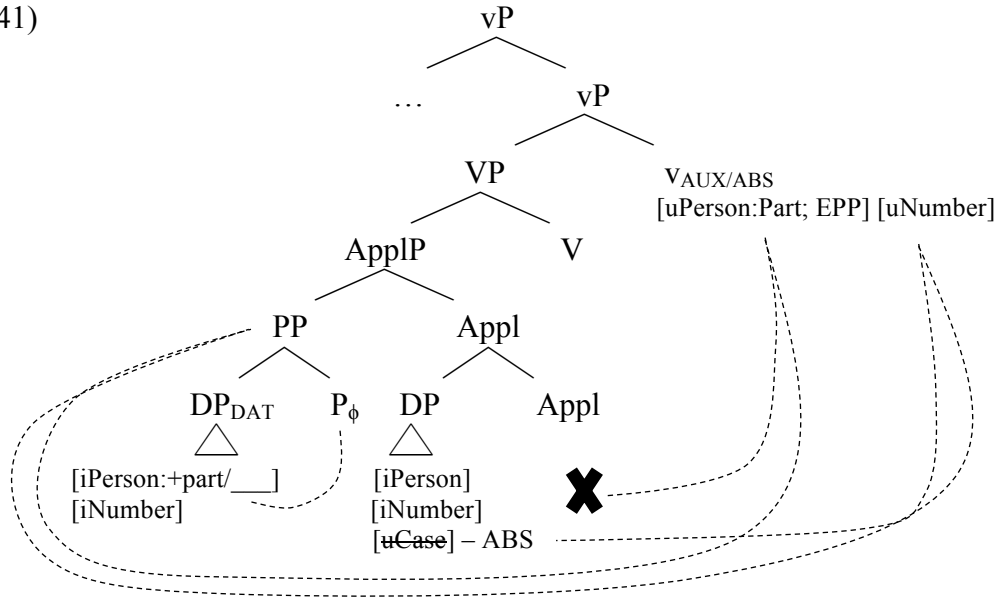
(40)



The structure in (40) shows what might result from the co-occurrence of a DAT and an ABS argument with a [+Participant], in violation of the PCC. Looking exclusively at the Agree relations between the relativized Person Probe on *v* and the internal arguments, Agree-Link would be possible with both the ABS and DAT arguments. However, recall that Agree-Link initiates the clitic doubling procedure; if two Agree-Link relations hold, the system would attempt to produce two doubled clitics. It is possible that this is where the derivation would fail – while one doubled clitic can be hosted, two cannot. The specifics of this proposed limitation on clitic doubling is discussed further in Chapter 4. Going forward, I assume that observed PCC effects result from the inability of *v* to host two clitics; this is not an issue with 3rd Person ABS arguments, which lack a Participant feature and thus are overlooked for Agree by the relativized Person Probe.

To summarize this section, (41) shows the *vP* for ditransitive clauses.

(41)



The structure in (41) shows that many Agree-Link relations are at play in ditransitives. First, the PP in Spec, ApplP includes a Phi Probe that Agree-Links with the DAT it selects, making the features of these arguments accessible despite the fact that the DAT has inherent Case (Rezac, 2008a). Note that contra Adger & Harbour (2007), the DAT argument in Spec, ApplP is ensured via selectional restrictions and not through Agree with Appl; in this analysis, this head is not a Probe.

Next consider the Agree-Link relations initiated by the relativized Person Probe on v. Recall from Section 1 that this Probe only seeks Goals with a Participant feature, in order to ensure that 3rd Person ABS clitics are not erroneously generated. Thus, when the v Person Probe encounters the DP complement of Appl, it does Agree with this argument, as it lacks a Participant feature in the 3rd Person. In contrast, the Person Probe does Agree-Link with P in Spec, ApplP, and thus has indirect access to the DAT argument hosted here. The relativization of the Person Probe is unproblematic because the DAT is argued to contain either a [+participant] or [-participant] feature, which correlates with the animacy preferences shown for DAT indirect objects. Because this Agree-Link relation always succeed, DAT doubled clitics are always

observed. Concerning PCC effects, it was claimed that the co-occurrence of 1st/2nd ABS arguments with a DAT indirect object is not observed because there is a limitation on the number of clitics that *v* could host. The clitic doubling the structurally higher argument (the DAT) prevails; therefore, only 3rd Person ABS arguments (which are not clitic doubled) are permitted.

In contrast, the Number Probe on *v* is able to Agree-Link with both the ABS argument and the P controlling the DAT. This ensures the Number agreement with the ABS argument observed on the anchor of AUX in ditransitives. Recall from Section 2 above that only the features of ABS arguments are eligible for Agree-Copy; the DAT is inaccessible (both by virtue of the hierarchy cutoff point (Bobaljik, 2008), and by being governed the PP (Rezac, 2008a)) and so neither Person nor Number features of this argument are observed on the anchor of AUX.

Finally, consider that the Number Probe Agree-Links with two targets (and the Person Probe attempts to do so). Conventional conceptions of Agree would suggest that once these Probes found a target (i.e., the higher DAT argument), they would cease to Probe. However, this cannot be the case, as Number agreement with the ABS argument is observed. Thus, Agree-Link with *v* is actually suggested to be an instance of Multiple Agree (Hiraiwa, 2000), as claimed for Basque by Arregi & Nevins (2012).

3.2.3 DAT agreement in applicative intransitives

DAT and ABS also co-occur in applicative intransitives, which feature an ABS subject and a DAT indirect object. Applicative intransitives appear in two configurations, termed DAT-ABS and ABS-DAT, based on hierarchical relations demonstrated between the two arguments, by Rezac (2008b).

- (42) a. *DAT-ABS Applicative Intransitive*
- Haiek Itxaso-ri gustatzen za-izki-o
 They.ABS Itxaso-DAT like L-have.PL-3S.DAT
 ‘Itxaso likes them’ (Lit: They are pleasing to Itxaso)
- b. *Ni Itxaso-ri gustatzen na-tzai-o
 I.ABS Itxaso-DAT like 1S.ABS-have.1S-3S.DAT
 ‘Itxaso likes me’ (Lit: I am pleasing to Itxaso)
- c. *ABS-DAT Applicative Intransitive*
- Ni Itxaso-ri etortzen n-atzai-o
 I.ABS Itxaso-DAT coming 1S.ABS-AUX-3S.DAT
 ‘I am coming to Itaxo’

(Rezac, 2008b, p. 63:(#1))

Notice that in DAT-ABS applicative intransitives, PCC effects are observed, as in (42b), while ABS-DAT applicative intransitives seem to disregard the PCC with impunity, as in (42c). Rezac (2008b) explains behavior by appealing to the different structures underlying these constructions, with regard to the initial position of the DAT and ABS arguments.

Looking first at agreement in DAT-ABS applicative intransitives, I assume that the same structure proposed for ditransitives can be used here, simply without an external (ERG) argument in Spec, vP. As in unaccusative intransitives, T in this situation is not T_{ERG} and therefore does not assign ERG Case or participate in clitic doubling. Maintaining the ditransitive assumptions, PCC effects result from the inability of v to host multiple clitics, and therefore the derivation is only successful with a 3rd Person argument that does not beget a doubled clitic. ABS Number agreement on the anchor of AUX and the DAT clitic are accounted for via Multiple Agree-Link with the Number and relativized Person Probes on v.²⁵

²⁵ Rezac (2008b) offers a repair option for PCC violations available in DAT-ABS applicative intransitives that is not available in ditransitives. This strategy involves the re-casting of the ABS

Thus, the analysis for ditransitives can be extended to DAT-ABS applicative intransitives without issue. I turn now to ABS-DAT applicative intransitives. The example in (42c) is repeated as (43) here.

- (43) Ni Itxaso-ri etortzen n-atzai-o
 I.ABS Itxaso-DAT coming 1S.ABS-AUX-3S.DAT
 ‘I am coming to Itxaso’

(Rezac, 2008b, p. 63:(#1c))

Notice that the DAT co-occurs with a 1st Person ABS argument. This is immediately problematic for the explanation proposed above, as it was claimed that *v* cannot host two doubled clitics – and both ABS and DAT doubled clitics are observed on AUX here (n-atzai-o).

In constructions like (43), Rezac (2008b) proposes that Merging the ABS argument higher than the DAT argument removes the DAT as a barrier to Agree between *v* and the ABS argument. On the analysis proposed here, however, Multiple Agree-Link means that there is no barrier to Agree; PCC effects are the result of an overcrowded clitic host, with the higher argument (the DAT) winning the position where the M-merger process begins. By this logic, if the ABS argument were Merged higher than Appl in ABS-DAT applicative intransitives, we

argument as an ERG argument (termed ABS Promotion (Arregi & Nevins, 2012) or ABS displacement (Rezac, 2008)).

- Ni-k Itxaso-ri gustatzen d-i-o-t
 I-ERG Itxaso-DAT like L-have.S-3S.DAT-1S.ERG
 ‘Itxaso likes me’

(Rezac, 2008b, p. 64:(#4))

In this example, the internal argument has Moved to Spec, *vP*, where it receives ERG Case and is clitic-doubled, indicating an Agree-Link relation with T. Thus, when this repair is available, it would indicate that T is T_{ERG}.

My fieldwork indicates that some speakers consider these constructions unacceptable, and therefore I leave the details of this possible repair aside. However, assuming that some speakers do find these constructions acceptable in Batua, the proposal put forth for this repair by Rezac is not incompatible with what is discussed here.

could expect a reverse PCC effect – the prohibition of DAT clitics. As (43) shows, this is not what is observed.

The solution, then, would be to find another host for one of the doubled clitics; then, it would have to be determined why this host could not support the doubled clitic in ditransitive and DAT-ABS intransitives. This might be accomplished by playing on the fact that there is nothing Merged in the external argument position Spec, vP in applicative intransitives. It could be posited that in ABS-DAT applicative intransitives that, after Multiple Agree-Link with v, a [+participant] ABS argument can move to the Spec position where an external argument would Merge, while the movement of the DAT argument creates a new Spec position. Thus, the limitation on doubled clitics is a limitation on the ability to create unlimited Specifier positions to which arguments can Move. This would explain why the PCC holds in ditransitives, as the ERG argument Merges in Spec, vP and this position is unavailable. However, this leaves a question of why PCC effects are observed in DAT-ABS applicative intransitives. The analysis at hand cannot account for these facts as-is. However, I maintain the analysis as it stands for ditransitives and DAT-ABS applicative intransitives, because of the support that it offers for the analysis of clitic doubling begun here and fully elaborated in Chapter 4.

Interestingly, my fieldwork indicates that speakers disprefer ABS-DAT sentences, either categorizing them as overly formal and unnatural, or rejecting them outright. The repair that they offer for such sentence recasts the DAT argument with a semantic case marker, as seen in (44).

- (44) a. ?/* Miren-i etorri na-tzai-o
 Miren-DAT come 1S.ABS-have.1S-3S.DAT
 ‘I have come to Miren’
- b. Miren-engana etorri n-aiz
 Miren-to come 1S.ABS-be.1S
 ‘I have come to Miren’

In (44a), both the pro-dropped ABS argument and the DAT argument *Miren-i* (Miren-DAT) generate doubled clitics, as seen in AUX (*n-atzai-o*). One informant found this sentence unacceptable, while others indicated that it would seldom be used except in written form. The repair in (44b), in which the argument *Miren* is introduced by the semantic case marker *-engana* ('to'), yields a simple intransitive AUX with a clitic only for the higher (pro-dropped) ABS argument. Note that this repair is suggested despite the animacy of the argument *Miren*. This might suggest that some speakers' representations do have a more universal PCC, which may be the result of a limitation on clitic hosting as suggested here.

Section 3.2.3 has considered PCC effects in applicative intransitives, in light of the analysis proposed for ditransitives. It was observed that in DAT-ABS applicative intransitives, the same analysis can be extended, with the substitution of T for T_{ERG}. In ABS-DAT applicative intransitives, however, the analysis faced a challenge as two clitics were observed despite the claim that PCC effects result from a limitation on clitic hosting. It was suggested that in these constructions, ABS arguments might Move to the external argument position, but it was unclear why this movement would not be possible when the higher internal argument was DAT. However, it was noted that ABS-DAT applicative intransitives with two doubled clitics were not acceptable to all speakers, with the preferred repair resulting in the generation of a single clitic.

4 Conclusion

This chapter has reviewed several analyses of ABS, ERG, and DAT Case assignment and agreement in Basque, and from these works has developed an analysis of the underlying structure that will prove compatible with the M-merger approach to clitic doubling offered in the following chapter. While many analyses of Basque work well toward advocating solutions for smaller data set, developing a synthesis of these analyses that accounts for Case, agreement, and

clitic doubling is a challenge. It is with this goal in mind that this chapter was developed. This is not to say that the theories in the work reviewed here are inadequate or invalidated by data I have put forth. Rather, the challenge lies in connecting the analyses and ensuring the implications of a theory that accounts well for one construction are compatible with the next. For example, I adopt Rezac et al.'s (2014) view of ERG Case assignment: recall that they claim ERG DP marking is separate from ERG agreement (i.e., clitic doubling) on AUX. Rezac et al. account for this by positing movement of the (KP+)DP after Agree with T_{ERG} – but they do not explicitly spell out how the DP in its moved position is morphologically realized as clitic in AUX final position. My goal was to tie up such loose ends; therefore, the decision to take one theory was partially motivated by the compatibility with data that the authors do not consider.

To summarize, it was argued that ABS Case is assigned structurally (Anand & Nevins, 2006; Rezac et al., 2014), as is ERG Case (Rezac et al., 2014). This is despite arguments to the contrary that advocate an inherent approach to ERG Case (Laka, 2006a; Woolford, 2006), based on thematic-role correlations, and the issue of unergatives. If Case is taken to be a dependent relationship, then truly intransitive unergatives (Preminger, 2012) with ERG subjects offer a formidable counterexample to structural Case analyses. However, by considering head to be parameterized on their ability to assign Case (Rezac et al., 2014), a structural analysis of Case can proceed. Ultimately, the approaches to ABS and ERG Case here were adopted for theory-internal reasons, due to their overall compatibility with the clitic doubling analysis proposed in the next chapter. I argue that the clitic doubling data can be accommodated in an Agree-based system, and the approach to Case pursued here provides the necessary Agree relations. Adoption of a non-Agree-based Case system (e.g., Arregi & Nevins, 2012; Marantz, 2000) would require the notion of Agree as the impetus for clitic doubling to be disbanded. Additionally, with regard

to the language acquisition component of this dissertation, it is highly valuable to provide an analysis which compares easily with those put forth for other languages; an Agree-based approach to Case allows for the comparison of speakers' underlying representation of Basque with the representations of more familiar NOM-ACC languages (e.g., Spanish). I acknowledge that these are theoretical, not empirical, motivations for the adoption of this approach to ERG and ABS Case assignment.

In contrast to the analyses of ERG and ABS Case, DAT Case was claimed to be inherent to the argument Merged in Spec, ApplP (Rezac, 2008a; Woolford, 2006). The inherent Case strategy was pursued over the structural/morphological alternative proposed by Baker & Vinokurova (2010) as the strategy for determining which DP received Case via Agree in the syntax was not compatible with the assumption of Multiple Agree between *v* and the DAT and ABS internal arguments.

Establishing these Case assignment relations clears the way for an approach to clitic doubling that is initiated by Agree between *v* (for ABS, DAT), and T (for ERG). However, if these Agree relations hold, the fact that only ABS agreement appears on the anchor of AUX needs to be explained. This was accounted for by dividing the Agree operation into Agree-Link, a syntactic operation that facilitates clitic doubling, and Agree-Copy, a post-syntactic operation that determines the features morphologically represented on the anchor of AUX (Arregi & Nevins, 2012). What determines whether an argument's features are eligible for Agree-Copy or not is where that argument is ranked on a hierarchy of accessibility (Bobaljik, 2008), and where the language limits agreement on this hierarchy. Basque, like Hindi and Icelandic, limits Agree-Copy to arguments with unmarked (i.e., ABS) Case.

Delving further into the Agree-Link relations that arise, the analysis presented here also accounts for several distributional facts. First, consider the claim that 3rd Person ABS arguments do not generate doubled clitics, and that anchor agreement with 3rd Person arguments is limited to Number. This was accounted for by suggesting that the Phi Probe on *v* is split and Probes separately for Person and Number (Béjar & Rezac, 2003, among others). Further, the Person Probe is relativized to seek arguments that include a [Participant] feature (Preminger, 2014). If it can be claimed that 3rd Person ABS arguments lack a [Participant] feature (Adger & Harbour, 2007), then the lack of ABS doubled clitic can ultimately be attributed to the failure of the relativized Person Probe to Agree-Link with this argument. On the other hand, the Number Probe successfully Agree-Links, which is minimally required for Case assignment, and the Number features of the ABS argument are observed on the anchor of AUX.

This characterization of the ABS argument is also useful in deriving PCC effects observed in ditransitive and in some applicative intransitives. Here, it is claimed that the Person and Number Probes of *v* Multiple Agree-Link (Arregi & Nevins, 2012; Hiraiwa, 2001) concurrently with both the DAT and ABS arguments. However, restrictions on the ability of *v* to facilitate the clitic doubling of multiple arguments results in the appearance of DAT clitics only. When an ABS doubled clitic tries to arise and fails (i.e., in 1st/2nd Person contexts), the derivation cannot proceed; when the ABS argument cannot be clitic doubled (i.e., in 3rd Person contexts), the derivation proceeds and PCC effects are observed. It should be noted that these constructions (i.e., ABS-DAT applicative intransitives) are accounted for by Rezac (2008b), meaning that the present analysis does have an explanatory shortcoming when compared with other options. However, Rezac characterizes the ABS and DAT morphemes on AUX as ‘agreement’, showing how the Agree relations can arise; he does not address how this agreement is spelled out as a

doubled clitic (indeed, he does not term these morphemes doubled clitics) in any case, not only in examples that run counter to the PCC. The challenge to Rezac's analysis of ABS-DAT applicatives intransitives, then, lies in the morphosyntactic realization of the Agree relations he is able to derive. The analysis put forth here is challenged by the few cases in which ABS and DAT clitics can co-occur; although no solution for this situation is offered at this time, based on the following analysis of clitic doubling, the account here does accommodate for the majority of the data in which DAT doubled clitics are generated as independent syntactic objects of the category D, ABS doubled clitics are prevented from being overgenerated, and ABS agreement (i.e., inflection) is appropriately realized. Further, it was noted that speakers found such constructions to be exceedingly formal, literary, and in one case completely unacceptable; this suggests a possible change in progress (or possibly a dialectal predisposition), indicating that speakers' underlying representations may, too, prohibit multiple clitics on the same functional head (i.e., prohibit multiple Specifiers).

Having established this framework, the following chapter offers an analysis of clitic doubling applying the M-merger analysis to Basque. (Harizanov, 2014; Kramer, 2014; Matushansky, 2006). This analysis offers an Agree-based approach to clitic doubling, and accounting for the facts of Basque will suggest some ways in which this powerful operation can be limited.

CHAPTER 4: Clitic Doubling in Basque

The previous chapter did not offer a justification for the characterization of absolutive (ABS)¹, ergative (ERG), and dative (DAT) morphemes on the auxiliary (AUX) as doubled clitics, nor an explanation of the Agree-based operation by which they arise. This section offers a complete analysis of these elements. In Section 1, I demonstrate that these morphemes are best analyzed as doubled clitics, not agreement markers; agreement features do arise, but this is on the functional head *v* that appears as part of the anchor² of AUX.

Section 2 turns to the long-discussed issue of clitic doubling, reviewing both pre-Minimalist and more current analyses; each of these analyses is then briefly examined in terms of its application to Basque. Thorough discussion is given to the Big DP analysis put forth by Arregi & Nevins (2012); although their analysis pays careful attention to the complex facts of Basque, there are many questions that arise when theoretical motivations are closely examined.

Ultimately, the analysis of clitic doubling that I pursue is the M-merger approach (Harizanov, 2014; Kramer, 2014), implemented in Section 3. This account is shown to accommodate clitic doubling in intransitive, transitive, and ditransitive clauses. The extension of this Agree-based approach, which accommodates the Case and agreement facts discussed in the previous chapter, requires some reconfiguration to account for the patterns seen in Basque, specifically the lack of 3rd Person ABS clitics and Person Case Constraint (PCC) effects. To this end, I build on the analysis put forth in the previous chapter, including the characterization of Agree(-Link) as Multiple Agree (Arregi & Nevins, 2012; Hiraiwa, 2001), and the splitting of

¹ Note that reference to ABS doubled clitics refers strictly to those doubling 1st/2nd Person arguments, as I claim Basque lacks 3rd Person ABS doubled clitics.

² As in previous chapters, I propose the term ‘anchor’ to refer to *v*+T heads to avoid theoretically significant morphological terms like ‘root’.

certain Probes to seek Person and Number agreement separately (Adger & Harbour, 2007; Béjar & Rezac, 2003; Preminger, 2011b, 2014). Further, it is argued that some Probes are relativized to seek only Goals with certain features (Adger & Harbour, 2007; Preminger, 2011b, 2014).

1 Characterization of ABS, ERG, DAT morphemes on AUX

This section argues for an analysis of ABS, ERG, and DAT morphemes on AUX as doubled clitics. Doubled clitics are not always immediately distinguishable from agreement markers; both are “morphemes that co-vary in phi features with an...argument of the predicate” (Kramer, 2014, p. 595). Additionally, the appearance of neither doubled clitics nor agreement markers excludes the argument they represent (unlike non-doubled subject or object clitics in French, for example).

However, doubled clitics and agreement markers are not identical. For example, while agreement marking is generally obligatory and must affix close to a verb, doubled clitics are sometimes optional, and can appear in positions further removed from the verb (see Kramer, 2014, for examples). The syntactic structure underlying doubled clitics and agreement markers is also notably different, with the latter arising as the result of an Agree relation, while on some analyses (e.g., Sportiche, 1996; Uriagereka, 1995) the former may require additional syntactic projections in which to Merge (Kramer, 2014). Having seen that the features of the ABS, ERG, and DAT morphemes on AUX co-vary with the Phi features of their respective sentential arguments, an investigation into the status of these morphemes as doubled clitics or agreement markers, and what causes them to be generated, is warranted for Basque.

It is fairly accepted that ERG and DAT morphemes on AUX are best analyzed as doubled clitics (Arregi & Nevins, 2012; Nevins, 2011; Preminger, 2009); accounts that refer to them as agreement are generally focused on other issues and are not investigating this characterization

(Rezac, Albizu, & Etxepare, 2014; Rezac, 2008b). However, the characterization of the ABS morpheme in AUX-initial position is contested: the ABS morpheme is considered agreement by some (Preminger, 2009), while it is considered a doubled clitic by others (Arregi & Nevins, 2012; Nevins, 2011). This section discusses these two views, ultimately analyzing the ABS morpheme as a doubled clitic along with the ERG and DAT. This is largely due to a difference in morpheme segmentation: for Preminger, the ABS argument is represented by two distinct Person and Number morphemes on AUX; for Arregi & Nevins (and myself), what Preminger characterizes as a second-position Number agreement morpheme is in fact a functional head with agreement features controlled by the ABS argument.

1.1 Preminger (2009): ERG/DAT as clitics, ABS as agreement

Preminger (2009) that Agree and clitic doubling are separate operations, with the ERG and DAT morphemes on AUX both arising as doubled clitics. In deriving these morphemes, the effect of failure of Agree is different: doubled clitics are simply not generated, while agreement markers arise with default features.

Preminger tests this diagnostic in several Long-Distance Agreement (LDA) constructions; here, I focus on his evidence from adpositional constructions. The data in (1) show successful agreement in such constructions, in which a nominalized clause is introduced by a locative (LOC) PP.³

³ Gloss is as in original. Note that Preminger divides the AUX root into two morphemes: a root and a second ABS agreement morpheme, following traditional analyses of Basque. On the analysis proposed here, the first AUX position would be occupied by an ABS doubled clitic or an L-morpheme (more on this in Sections 1.2 and 1.3) and the second position would be *v*, reflecting agreement with the ABS argument.

- (1) [[Harri horiek]_{DP_i} altxa-tze-n]_{PP} probate d-it-u-zte
 [[stone(s) those]_{PL}(ABS)] lift-NMLZ-LOC] attempted 3.ABS-PL.ABS-have-3PL.ERG
 ‘They have attempted to lift those stones’

(Substandard Basque, Preminger, 2009, p. 626:(#14a))

In (1), the adposition *-n* (glossed as LOC) is the head of a PP that selects the nP headed by nominalizing *-tze*. Agreement is not blocked by the nominalization, and both the Person and Number features of the DP *harri horiek* ‘those stones’ are reflected on AUX (*d-it*).

To determine the status of DAT, ERG, and ABS morphemes on AUX, Preminger employs a diagnostic that examines the repair when agreement fails to arise. If a doubled clitic were expected to arise and agreement fails, nothing surfaces in this position; if a morpheme with default agreement features arises, it is in lieu of an agreement morpheme. This is because clitic doubling involves the generation of a new syntactic object, while agreement is the valuation of features that entered the derivation along with the morpheme/head hosting them (Preminger, 2009, p. 623). First looking at the DAT morphemes on AUX, the presence of a DAT morpheme yields ungrammaticality in (2a), but when nothing appears in the DAT position as in (2b), the construction is acceptable.

- (2) a. *[[Agindu-e-i kasu egi-te-n] saiatu nin-tzai-ø-e-n]
 order(s)-ART_{PL}-DAT attention pay-NMZ-LOC try 1S.ABS-be-S.ABS-3P.DAT-PST
 ‘I tried to pay attention to the orders’
- b. [[Agindu-e-i kasu egi-te-n] saiatu nin-tzai-ø-n]
 order(s)-ART_{PL}-DAT attention pay-NMZ-LOC try 1S.ABS-be- S.ABS-PST
 ‘I tried to pay attention to the orders’

(Substandard Basque – Preminger 2009, p. 636:(#25-26))

In (2a), the full agreement between AUX and the DAT argument leads to ungrammaticality, because the DAT argument cannot serve as a target for clitic doubling when it is contained in an

embedded clause. As (2b) shows, this is remedied⁴ when an AUX form lacking a DAT morpheme is used; this suggests that the DAT morpheme on AUX is a doubled clitic when it appears in (non-adpositional LDA) constructions.

Preminger offers two additional pieces of evidence to support the result of the diagnostic related to the behavior of the DAT argument and doubled clitics in general (cf. Anagnostopoulou, 2003). First, he notes that doubled clitics are subject to clausemate restrictions; noticeably, the DAT argument and AUX are not clausemates in (2a) and agreement does not arise. Second, an argument that yields a doubled clitic does not intervene in Agree. In Basque, the DAT argument does not cause defective intervention when a doubled DAT clitic is generated. Although the DAT argument is in a higher structural position than the ABS argument, Agree between AUX and ABS can still arise as reflected by the presence of (Number) agreement with the ABS argument, as in (3), because the DAT argument generates a doubled clitic and therefore is not an impediment to the Agree relation.

- (3) guraso-ek **ni-ri** belarritako ederra-k-ø erosi d-izki-**da-te**
 parent-P.ERG **me-DAT** beautiful earring-P-ABS bought L-have.PL-1S.DAT-3P.ERG
 ‘My parents have bought me beautiful earrings’

(Laka, 1996, 2.2.4:(#52))

Taken together with (2), the data in (3) support the claim that DAT morphemes on AUX are best characterized as doubled clitics.

Preminger claims that ERG morphemes on AUX are also doubled clitics, based on common syntactic and morphological properties with the DAT doubled clitics. First, like the DAT argument and unlike the ABS argument, ERG arguments cannot value the features of the anchor of AUX (Preminger, 2009, p. 646), as was discussed in the previous chapter; this

⁴ A repair in which default agreement features are used also leads to ungrammaticality.

suggests a difference in the nature of DAT and ERG agreement on one hand, and ABS agreement on the other. As ERG features cannot value the Probe via simple Agree, he notes that “the only way ergative agreement morphemes on the auxiliary can come about is by means of clitic doubling” (Preminger, 2009, p. 647). Second, Preminger (2009, p. 649) notes the morphological similarity between DAT and ERG clitics on one hand, and ABS morphemes on the other. The fact that ERG clitics are identical to DAT clitics suggests for him that these morphemes are of one type (doubled clitics) in opposition to ABS morphemes (agreement markers).⁵

Finally, Preminger argues that ABS morphemes are agreement markers, claiming that default features will arise in their place when agreement fails. Note that while ERG/DAT doubled clitics reflect both Person and Number in one morpheme, these features are hosted on separate morphemes when related to ABS arguments. Consider adpositional constructions in which an embedded DAT argument appears higher than an embedded ABS, as in (4) below.

- (4) [[Lankide-e-i]_{DP_i} [liburu horiek]_{DP_r} irakur-tze-n] probate
 [[colleague(s)-ART_P-DAT] [book(s) those_{PL}(ABS)] read-NMZ-LOC] attempted

d-ø/*it-u-(z)te

3.ABS-SG/*PL-have-3P.ERG

‘They have attempted to read the books to their colleagues’

(Substandard Basque, Preminger 2009, p. 640:(#29))

⁵ With regard to this claim, I would point out that there are some similarities in the form of ABS versus ERG/DAT doubled clitics; compare for example the ABS 2^{sd} Person clitics /z/ with the ERG/DAT forms /zu(e)/. Though there is admitted dissimilarity between 1st Person singular ABS versus ERG/DAT clitics, the ABS clitic inventory is not wildly dissimilar to the ERG/DAT ones. I suggest that the primary difference in form is the result of the morphological position and subsequent phonological context of the ABS doubled clitics – ABS clitics appear in AUX-initial position, followed by a vowel-initial root, which obviates any vowel that the ABS clitic might underlyingly bring along.

In (4), the embedded clause contains a DAT argument (*lankide-e-i* ‘the colleagues-DAT’) and an ABS argument (*liburu horiek* ‘those books.ABS’). The DAT is structurally higher than the ABS and blocks agreement, as it is not rendered invisible by a doubled clitic since it is not a clausemate of AUX. If agreement were successful, 3rd Person and plural morphemes would be expected (*d-it-u-(z)te*); if these were doubled clitics, both would be expected to be absent (**u-(z)te*). However, Agree fails to arise between AUX and ABS and default agreement (*d-ø*, the 3rd Person and singular morphemes) surfaces on AUX, which indicates that it is an agreement morpheme and not a doubled clitic.

1.2 Arregi & Nevins (2012): ABS, ERG, and DAT are all doubled clitics

Arregi & Nevins (2012) agree with Preminger (2009) that in the Biscayan dialects of Lekeitio, Ondarru, and Zamudio, DAT and ERG morphemes on the auxiliary are doubled clitics. They note that morphemes with default agreement features are not inserted in lieu of doubled clitics when the latter fail to be generated; following Preminger’s diagnostic, this suggests that these morphemes are not agreement morphemes. However, they disagree that the ABS morpheme is best characterized as agreement; rather, they argue that it is a doubled clitic. Critical to this argument is the claim that ABS doubled clitics are only generated in 1st and 2nd Person contexts where permitted by the PCC, discussed in Section 1.3 below.

They support this claim by showing that the ABS morpheme can be omitted from AUX in some constructions, as in (5).

- (5) Eur -ak su-ri neu-ø presenta-ø d-o-tzu-ø-e
 they-ERG.PL you(SG)-DAT me-ABS introduce-PRF L-have.3S- 2S.DAT-3.ERG-P.ERG
 ‘They introduced me to you(SG)’

(Ondarru – Arregi & Nevins, 2012, p. 78:(#65))

In this example, it would be expected that the first morpheme on AUX would be a 1st Person

singular ABS clitic doubling the ABS argument. However, recall that 1st and 2nd Person ABS morphemes not observed in ditransitive constructions due to the inability of *v* to generate multiple doubled clitics. The AUX-initial morpheme takes the form /*d-*/, which Arregi & Nevins argue surfaces in this position as a morphologically-motivated placeholder (the L-morpheme), which appears in an empty AUX-initial position. Thus, /*d-*/ in both (4) and in (5) should not be viewed as a morpheme with default (3rd Person) agreement features as Preminger claims, but rather the lack (omission) of the morphemes in the syntax. For Arregi & Nevins, /*d-*/ is indicative of the wholesale absence of a morpheme when Agree does not obtain, which is the behavior Preminger suggests for a blocked doubled clitic.

However, Preminger's analysis can account for the data in (5) by positing that the dative argument *su-ri* 'you-DAT' constitutes a barrier to Person agreement with the ABS argument, with default 3rd Person features resulting in lieu of the 1st Person features of the ABS argument *neu-ø* 'me-ABS'. Thus, (5) does not offer any evidence in favor of one analysis over the other.

Before moving on, consider the default (i.e., singular) agreement feature manifested on the second position morpheme in both (4) and (5). Arregi & Nevins' analysis does not exclude the ABS agreement in AUX altogether: they propose that ABS agreement *does* appear in AUX in the second position. As mentioned in Chapters 2 and 3, the second position morpheme is part of the anchor of AUX and hosts both Tense and agreement morphology⁶, the latter of which has the ABS argument as its controller. This morpheme can be claimed to have agreement features, but it should be noted on this analysis, that it is a morpheme distinct from the ABS doubled clitic and/or the L-morpheme /*d-*/ - and is not of category D, like doubled clitics, but category *v* (or T, for Arregi & Nevins).

⁶ Recall that my analysis of AUX differs from Arregi & Nevins in that I assume that *v* and T are both included in AUX, while they claim *v* cannot raise to T due to the position of AspP.

Returning to the nature of the AUX-initial ABS morpheme, evidence against the analysis of /d/ as a doubled clitic comes from the fact that its form varies based on Tense (among other factors). Nevins (2011, p. 958) notes that “[c]litics...being D elements, are tense-invariant, while functional morphemes that bear agreement affixes may be sensitive to tense.” Note that the form of the 1st and 2nd Person ABS morphemes stay consistent regardless of tense, while the form changes in 3rd Person contexts.

(6)	a.	Gu	etorri	g-ara	vs.	Gu	etorri	g-inen
		We.ABS	come	1P.ABS-be.1P		We.ABS	come	1P.ABS-be.1P.PAST
		‘We have come’				‘We had come’		
	b.	Zu	etorri	z-ara	vs.	Zu	etorri	z-inen
		You.ABS	come	2S.ABS-be.2S		You.ABS	come	2S.ABS-be.2S.PAST
		‘You have come’				‘You had come’		
	c.	Umea	etorri	<u>d</u> -a	vs.	Umea	etorri	<u>z</u> -en
		Child.ABS	come	L-be.3S		Child.ABS	come	L-be.3S.PAST
		‘The child has come’				‘The child had come’		

Arregi & Nevins (2012) note that in Biscayan Basque, the form /d/ changes based on non-Phi features of the AUX – that is, /d/ is the elsewhere case, and the form /s-/, /dx-/ or even /-ø/ can appear depending on whether AUX is (in)transitive, (non)applicative, or [\pm past]. The observation that /d/ is sensitive to non-Phi features holds for standard Basque as well. Trask (1981) notes that /d/ varies in form depending on tense or other features of AUX. Table 1 below shows the range of forms for standard Basque.

Table 1. Verbal category-dependent AUX-initial morphemes⁷

⁷ Regarding this terminology, Trask (1981, p. 290) says that the term *contingent* refers to “the set of forms called *éventuel*” while the *old subjunctive* is presumably an historical form whose remnants are seen in modern Basque 3rd Person imperatives. From this point on, I will leave these two forms aside and focus on the L-morphemes inserted based strictly on [\pm Tense]; ultimately, the analysis would be extendable to the *contingent* and *old subjunctive* by identifying and referencing the features on V, v, or T that distinguishes these forms.

Morpheme	Usage
<i>d-</i>	present tense
<i>z-; ø-</i>	past tense
<i>l-</i>	contingent forms
<i>b-</i>	3 rd Person imperative; old subjunctive?

(Trask, 1981, p. 297)

Trask, like Arregi & Nevins, notes that it is curious that the 3rd Person ABS morpheme on AUX would be the *only* morpheme that depended on the non-Phi features of “tense, mood, aspect”, (Trask, 1981, p. 296) of the root. He suggests that /d/ (and its allomorphs) are not indicative “of the *presence* of a third person, but the *absence* of a first or second person that would be marked in the initial position” (Trask, 1981, p. 297). The claim is that these markers were initially indicative of verbal category features and continued to arise in the 3rd Person, while in 1st/2nd Person contexts they were subsumed by Phi-features markers.⁸ In the case of ditransitives, /d/ (and its allomorphs) arises in all contexts because agreement with 1st/2nd Person ABS arguments is blocked (as referenced in Section 1.2 above).

The observation that the ‘3rd Person ABS’ morpheme alone among AUX argument markers is sensitive to verbal features, like Tense, is strong support for the claim that Basque lacks a doubled clitic for 3rd Person ABS arguments, and is the position I will adopt henceforth.⁹

⁸ This is not dissimilar to Preminger’s (2014) “morphological competition” principle for the emergence of clitics.

⁹ While the Tense-sensitive form of /d/ does suggest that it is not a doubled clitic, it is true that the Tense *invariance* of the 1st/2nd Person AUX-initial morphemes does not prove that they are doubled clitics. It is possible that they could still be analyzed as ABS agreement markers (Preminger, 2009). However, following the argumentation of Arregi & Nevins (2012, p. 56), the divergence in behavior between 1st/2nd Person ABS morphemes on one hand and 3rd Person ABS morphemes on the other on the basis of Tense within one paradigm (be it for doubled clitics or agreement markers) would certainly be notable. Therefore, I will proceed with the claim that 1st/2nd Person ABS arguments generate doubled clitics, 3rd Person ABS arguments do not, and that the AUX-initial /d/ in 3rd Person contexts is a post-syntactically inserted L-morpheme.

If /d/ is not a doubled clitic and not a syntactically generated agreement morpheme, what is it? Arregi & Nevins (2012, p. 56) claim that it is a placeholder morpheme, termed an *L-morpheme*, where “‘L’ is for *Left*, or for *Linearization-related*”. This morpheme is not present in the narrow syntax; it is inserted post-syntactically to satisfy a morphological requirement that the root not appear in the left-most position of AUX. Henceforth, this morpheme will be referred to as ‘L’, recognizing that it is not a doubled clitic, and that its form is not always fixed to /d/. Finally, note that the L-morpheme analysis requires an explanation of clitic doubling in which 3rd Person ABS clitics are not generated, as will be demonstrated in Section 3.¹⁰

In sum, DAT and ERG morphemes on AUX will be analyzed as doubled clitics due to the clausemate restriction on their distribution, their behavior with respect to intervention, and their morphological similarities. The analysis of the first two morphemes on AUX influences their categorization as doubled clitics or agreement morphemes. For Preminger, these morphemes were analyzed as two agreement markers; for Arregi & Nevins, first position, 1st and 2nd Person ABS morphemes on AUX were analyzed as doubled clitics, as evidenced by L-morpheme insertion and Tense-(in)variance, while the second position morpheme was AUX inflected with the agreement features of the ABS argument. This analysis follows the latter view. The inflectional morphology on the second morpheme will be interpreted as inflection on part of the anchor of AUX (v), evidenced by its default manifestation when agreement is blocked.

¹⁰ As above, this is one interpretation of the observed patterns and not a true explanation for why these patterns are observed. However, I proceed following Arregi & Nevins’ (2012) view, for its compatibility with the clitic doubling analysis motivated below and the PCC effects derived in the previous chapter, as well as the modular approach to post-syntactic processes that they assume (detailed in Chapter 5).

1.3 3rd Person ABS morphemes on AUX

In the section above, I claimed that the left-most morpheme on AUX is a clitic doubling the 1st or 2nd Person ABS argument, which in Chapter 3 was generated as a result of Agree-Link with a Person Probe on *v*. However, in 3rd Person contexts, this Agree-Link relation does not arise and no clitic is generated, with an L-morpheme inserted into its position in the morphology (Arregi & Nevins, 2012). This section briefly specifies the contexts in which the L-morpheme surfaces, versus ABS doubled clitics.

The morphosyntactic environment for the L-morpheme is best described as one in which no ABS doubled clitic is generated. This syntactic context sends a structure to the Morphological Structure (MS) in which, after Linearization (and subsequent Linear Operations), the anchor of AUX (*v* and T) is in the left-most position. This is in violation of morphological conditions on Linearization, and is repaired via L-morpheme insertion.

In intransitive and transitive clauses, an ABS doubled clitic is not generated when the ABS argument is 3rd Person due to its inability to Agree with the relativized Person Probe on *v*. In ditransitives, *only* 3rd Person ABS DPs are accepted; thus, no doubled clitics are generated and an L-morpheme surfaces in all ditransitive clauses. The prohibition against 1st/2nd Person ABS DPs in ditransitives can be characterized as an instance of the Person Case Constraint (PCC) in Basque. The way PCC effects arise in ditransitive and (some) applicative intransitives was explained in Chapter 3.

When the PCC applies, the result is the prohibition on the co-occurrence of 1st/2nd Person ABS direct object arguments in the presence of higher DAT arguments. For Basque, this rules out the presence of 1st/2nd Person (clitic-generating) ABS arguments in ditransitives, as well as some applicative intransitives where the DAT argument is higher than the ABS (Rezac, 2008b).

Chapter 3 argued that this is the result of the inability of *v* to generate multiple doubled clitics. If L-morphemes appear in the context of 3rd Person morphemes, it follows that the L-morpheme appears in all PCC contexts, meaning all ditransitives and DAT-ABS applicative intransitives.

2 Previous analyses of clitic doubling

This section introduces theories of clitic doubling. Section 2.1 offers a survey of a number of well-known analyses (Anagnostopoulou, 2003; Bleam, 1999; Jaeggli, 1982; Roberts, 2010; Sportiche, 1996; Suñer, 1988; Uriagereka, 1995), briefly examining the application of each to Basque. Section 2.2 offers an in-depth discussion of the clitic doubling analysis offered for Basque by Arregi & Nevins (2012). It will be shown that while this analysis does account for the distribution of Basque clitics, there are some conceptual issues that warrant an alternative analysis of the phenomenon. This paves the way for the M-merger analysis of clitic doubling in Section 3.

2.1 Survey of approaches to clitic doubling

Here, I briefly review some well-known approaches to clitic doubling (though the survey is by no means exhaustive). Commentary about the application of these analyses to Basque is offered.

2.1.1 Pre-Minimalism approaches to clitic doubling

This section introduces two pre-Minimalist views of clitic doubling (Jaeggli, 1982; Suñer, 1988). Both of these accounts, which I try to adapt to Basque, focus on data from Romance languages.

Working in the Government and Binding (GB) Framework (Chomsky, 1981), Jaeggli (1982) surveys several Romance languages, noting that clitic doubling is prohibited in some languages, but heavily preferred/obligatory in others. He works toward a theory that may account

for the cross-linguistic distribution of clitic doubling; specifically, that it is disallowed in some languages (French), allowed with restriction in others (Standard Spanish), and allowed even more broadly elsewhere (Rioplatense Spanish).

Jaeggli assumes a base-generation view of clitic doubling; clitics enter the derivation in their final position relative to the verb. This raises the question of what occupies the argument position that would have been filled, were it not for the clitic. In constructions where clitic doubling does not occur, Jaeggli assumes that PRO occupies this position. This is because clitics are argued to be Case-absorbers, and so the element in the argument position needs to be licensed without receiving structural Case. A puzzle therefore arises in clitic doubling constructions: if the clitic is a Case-absorber, what licenses the doubled argument? Following Kayne's Generalization that arguments in clitic-doubling constructions are introduced by a preposition-like element, Jaeggli proposes that when clitic doubling is allowed, it is because the element *a*, inserted prior to the doubled NP, can assign Case. This is why clitic doubling is permitted in indirect object constructions (indirect objects are all introduced by *a*) and in some dialects, when a direct object is preceded by *a*.

To extend this analysis to Basque, it would have to be claimed that ERG, ABS, and DAT doubled clitics Merge directly on to AUX. As Case absorbers, the elements licensing the arguments being doubled would presumably be the Case markers /k/ (for ERG), /ri/ (for DAT) and /ø/ (for ABS). This is not incompatible with the ERG and DAT Case approach suggested in Chapter 3, in that /k/ could be taken as the spell out of K_{ERG} , and /ri/ could be taken as the spell out of the P that introduces the inherent DAT argument. Presumably it could be extended further, with a functional head spelling out as /ø/ licensing the ABS argument. However, the Minimalist approach to DP licensing in most instances relies on the Agree operation; the approach to DP

licensing/Case that Jaeggli's analysis assumes reduces the role of Agree to the simple valuation of uninterpretable features on the Probe, with no consequence for the Goal DP. Further, if these DPs do receive Case via their Case markers, it is questionable whether or not they would be eligible Goals at all. Thus, the extent of the clitic inventory in Basque suggests a diminished role for Agree in DP licensing/Case. Although Jaeggli's account does not fail here, the implication that the role of Agree is reduced in this language motivates the pursuit of alternative analyses of clitic doubling.

In another GB analysis, Suñer (1988) analyzes Spanish clitic doubling as a type of agreement between a clitic and an NP, parallel to subject-verb agreement. Suñer provides the following conditions for well-formed clitic doubling: first, the clitic and NP must be co-indexed; second, the clitic must c-command the NP it doubles; finally, there is one Case assignment and one theta-role per chain. Further, clitics (which Suñer considers agreement morphemes) and the NPs¹¹ they double form a chain, and are thus subject to the Matching Principle, which requires feature-matching between these two syntactic objects. This includes not only Phi features, but also [+human], [+specific], and [+animate] features.

Given this analysis of clitic doubling, Suñer explains why the distribution of clitic doubling is different for direct objects and indirect objects in Porteño Spanish (Buenos Aires, Argentina). Lacking from this account is an explanation of precisely where and how doubled clitics enter the derivation, and how they are co-indexed with the NP arguments. Given the lack of discussion regarding movement, I assume that Suñer intends for these elements to be base-generated in their surface positions; perhaps any element entering the derivation in the clitic position is by default co-indexed with an NP argument in an appropriate position.

¹¹ Regardless of whether the doubled argument is an indirect object or a direct object, Suñer analyzes them as NPs, contra Jaeggli, for whom indirect objects were PPs.

Considering the extension of this account to Basque clitic doubling, it can be noted that the account must be extended to clitic doubling of subject NPs as well, subject to the same well-formedness conditions. More interesting, however, is the application of the [+specific] condition to Basque direct objects. Clitic doubling occurs with both [+specific] subjects and direct objects, as seen in (7) and (8).

- (7) a. Ume batzu-ek ni ikusi n-au-te
 child some-P.RG me.ABS seen 1S.ABS-have.1.S-3P.ERG
 ‘Some children have seen me’
- b. Ume-ek ni ikusi n-au-te
 Child-P.ERG me.ABS seen 1S.ABS-have.1.S-3P.ERG
 ‘The children have seen me’
- (8) a. Zu-k gu-ri lore batzu-k ekarri d-izki-gu-zu
 you.ERG us.DAT flower some-P.ABS brought L-have.P-1P.DAT-2S.ERG
 ‘You have brought us some flowers’
- b. Zu-k gu-ri lorea-k ekarri d-izki-gu-zu
 you.ERG us.DAT flower-P.ABS(DEF) brought L-have.S-1P.DAT-2S.ERG
 ‘You have brought us the flowers’

(cf. Laka, 1996:(#62-64))

Following Suñer, this would be due to the clitics not including a value for the [specific] feature in the lexicon. For the direct object, however, the following is observed:

- (9) a. Umea-k ni ikusi n-au-ø
 Child-ERG me.ABS seen 1S.ABS-have.1.S-3S.ERG
 ‘The child has seen me’
- b. Umea-k txakurra ikusi d-u-ø
 child.ERG dog.ABS(DEF) seen L-has.3S-3S.ERG
 ‘The child has seen the dog’
- c. Umea-k txakur bat ikusi d-u-ø
 child.ERG dog one/some.ABS(INDEF) seen L-has.3-3S.ERG
 ‘The child has seen some dog’

Notice that in (9b) and (9c), the direct object (ABS argument) is 3rd Person – and thus not represented by a doubled clitic. This contrasts with (9a), in which a clitic on AUX doubles the 1st Person pronoun. Following Suñer’s account, the lack of doubled clitic in (9c) could be interpreted as a repair to a violation of the Matching Principle, as the argument *txakur bat* ‘one/a/some dog’ is indeed [-specific]. Strictly following this account, the lack of doubled clitic in (9b) is not predicted; however, a language-specific modification to the feature specification of the direct object doubled clitic could be proposed that would prohibit 3rd Person direct object clitic doubling (i.e., by claiming the clitic enters the derivation specified for a [+participant] feature). All in all, this account can be extended to account for the distributional patterns of Basque just as it can for Spanish; indeed, the notion of clitics generated in a position c-commanding the NPs they double is reminiscent of the account put forth for Basque by Arregi & Nevins (2012). As mentioned above, however, what Suñer’s analysis leaves undetermined is the avenue by which the doubled clitics depart from their initial position to appear on their host. I suggested above that they are likely expected to be base-generated in their surface position; for Basque, this would suggest that the clitics Merge directly with the functional heads and thus requires Agree(ment) between the functional head and the doubled NP. However, it is unclear why this Agree relation would surface as a doubled clitic instead of – or in the case of ABS clitics, in addition to – the valuation of Phi features on v and T. Put another way, it is unclear where doubled clitics Merge directly in their surface position would obtain their D category feature. Suñer leaves aside the categorical characterization of doubled clitics, but trying to fill this point in does lead to this question. Further, if ABS clitics and ABS anchor agreement are separate, as the analysis here suggests, the double realization of agreement with the ABS

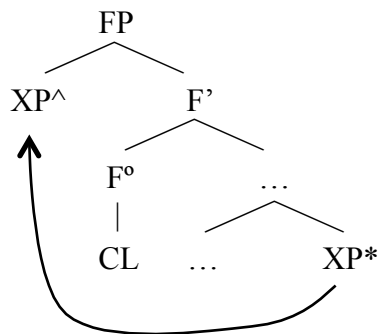
argument alone becomes questionable. Ultimately, the configuration of the clitic with respect to its functional head host leads me to pursue an alternative theory.

2.1.2 Sportiche (1996): Combining Base-Generation and Movement analyses

Sportiche (1996) discusses opposing, prominent views of clitics in general, drawing the conclusion that clitics are best analyzed as heads of functional projections, with some syntactic object licensed in the specifier of this projection with which the clitic agrees. On Sportiche's account, the clitics do not move from this head position, contra movement analyses. Movement can occur in clitic constructions – however, it is movement of the DP that the clitic either represents or doubles.

Specifically, clitics are heads of voice projections depending on the Case of the argument that they represent (e.g., NOM Voice, ACC Voice, DAT Voice). The basic clitic construction is represented as follows.

(10)



(Sportiche, 1996, p. 24:(§2))¹²

In (10), the clitic is shown as the head of its own functional projection, and the element with which it agrees is shown moving to the specifier of this projection, facilitating Spec-head agreement. Sportiche determines that XP* always moves to XP^ in Spec, FP, although this does not always occur overtly in the syntax. He draws a comparison between clitics and other

¹² The notation XP^ and XP* are originally found in Sportiche, showing that these phrases are distinct but related.

operators (e.g. WH, Q) and establishes a Clitic Criterion for XP* movement, parallel to the WH-Criterion.

(11) Clitic Criterion

At LF

- i. A clitic must be in a Spec/head relation with a [+F] XP
- ii. A [+F] XP must be in a Spec/head relation with a clitic

(Sportiche, 1996, p. 26:(\$N31))

In (11), [+F] refers to the feature(s) with which the clitic and its referent agree, e.g. Phi features, Case features, etc. The Clitic Criterion ensures that ultimately the referent XP ends up in a position that ensures agreement. Like WH-movement, XP movement can occur post-syntactically. Additionally, this XP itself may be overt or covert, as can the head (H, i.e., the clitic) itself. Taken together, these parametric options for c/overtness yield several distinct clitic constructions, as shown in (12).

(12) *Clitic constructions – parametric c/overtness*

- a. **Non-doubled clitic:** Covert XP moves covertly or overtly¹³ with overt H
- b. **Phrasal movement:** Overt XP moves overtly with covert H
- c. **Object agreement/Clitic Left Dislocation:** Overt XP moves overtly with overt H
- d. **Clitic doubling:** Overt XP moves covertly with overt H

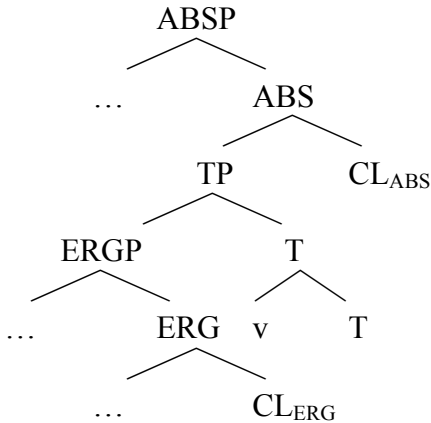
(Cf. Sportiche, 1996, p. 28)

Thus, Sportiche accounts for clitic doubling by proposing that clitics are base-generated as the head of their own functional projection, presumably in close proximity to the verb to which they cliticize; the DP that is doubled is generated lower in the structure and can move covertly or overtly to the specifier of the projection headed by the clitic, ensuring agreement between these two elements in the appropriate features.

¹³ In (12a), it is unclear how a covert XP could move overtly, but this is included in Sportiche's original quotation: "A covert XP* moving overtly or covertly to XP^ with H overt gives rise to undoubled clitic constructions as in French or Italian or Dutch" (Sportiche, 1996, p. 28).

To be extended to Basque, this account would require the addition of three FPs as Sportiche notes that each clitic is the head of its own projection, based on Case. As clitics are base generated and do not move, these functional projections would need to constellate around the FPs that form the anchor of AUX, as follows.

(13) Sample transitive AUX



The clitic construction in (13) shows that following Sportiche, additional functional projections are needed surrounding the anchor of AUX (a complex T head). These projections are reminiscent of Agr nodes, requiring updating for a more modern approach to clitic doubling, primarily due to the absence of AgrPs from current syntactic structures. Further down in the structure, DPs representing the arguments need to be generated; it is not clear that DP movement would be overt or covert due to the potential for scrambling in Basque. Although these DPs can be overt, it is possible that they are not always overt, to account for Basque being a pro-drop language.

This analysis does not offer ready explanations for some of the more idiosyncratic characteristics of Basque clitic doubling. First, there is no immediate mechanism in place that would keep 3rd Person ABS clitics from being generated; whatever mechanism ensures that the clitic projections enter the derivation would have to be specified so that a projection does *not*

Merge in 3rd Person contexts. Additionally, there are problems accounting for the PCC effects observed in Basque clitic doubling.¹⁴ Recall that in most contexts, ABS and DAT arguments cannot co-occur unless the ABS argument is in the 3rd Person, and consequently does not generate a doubled clitic. For this analysis, it is not immediately clear why such effects would be observed, as ABS and DAT clitics are generated in their own unique FPs and are not in competition for any syntactic resources. Finally, note in order to accommodate the multiple clitics that Basque requires, all arguments would be required to Move from their initial base position, which would very likely cause intervention effects.

2.1.3 Anagnostopoulou (2003): Clitic Doubling as Movement

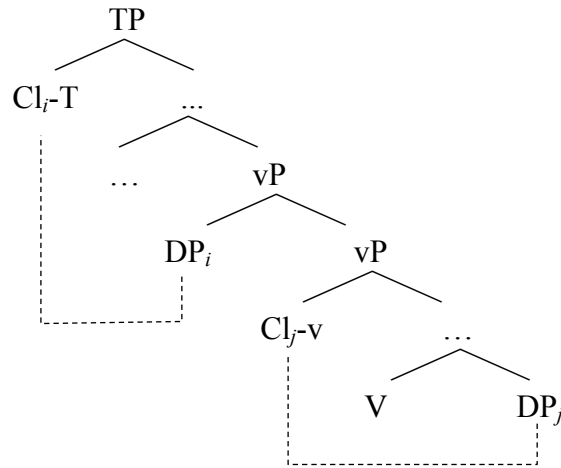
In her (2003) analysis of ditransitives, Anagnostopoulou develops a theory of clitic doubling for Greek in which the phenomenon is analyzed in terms of movement. Specifically, a copy of the argument represented by a doubled clitic Moves to its target location, which may bypass other arguments in the process; a copy of the doubled argument remains *in situ*. The copy's landing site is determined by the status of a functional head as an attractor (e.g., T), though the properties that make an attractor seem to be on a language-specific, featural basis (p. 204). Post-syntactically the higher argument is spelled out as the clitic, and the lower argument is spelled out as the full DP argument (p. 206). In terms of its characterization, the clitic copy could be analyzed as a pronominal copy of the lower argument, as a determiner in a complex DP, or the phonetic realization of a formal feature set copied from the lower argument (pp. 211–212).

Applying this analysis to Basque, it would first be necessary to identify the attractor of DP copies; in Basque, as attractors are likely functional heads (v and T), it is possible that

¹⁴ The fact, at least in the Ondarru dialect of Basque, that non-3rd Person ABS DPs can co-occur with DATs even though clitics do not (Arregi & Nevins, 2012), suggests that clitics may be at the heart of PCC effects, although this proposal is not without alternatives (Béjar & Rezac, 2003).

attractors must contain EPP features. In Basque, DP copies raise to v and T, and like Greek these higher copies are spelled out as clitics; this results in a structure like (14).

(14)



(cf. Anagnostopoulou, 2003, p.206:(#285’))

Subsequently, v would need to raise to T, forming a complex head.

This structure is not altogether incompatible with the Basque facts; indeed, (14) resembles the initial Copy-Move approach preposed below. Further specification of the characteristics of attractors and attractees is required to determine how the clitics all surface on the same structure (AUX).

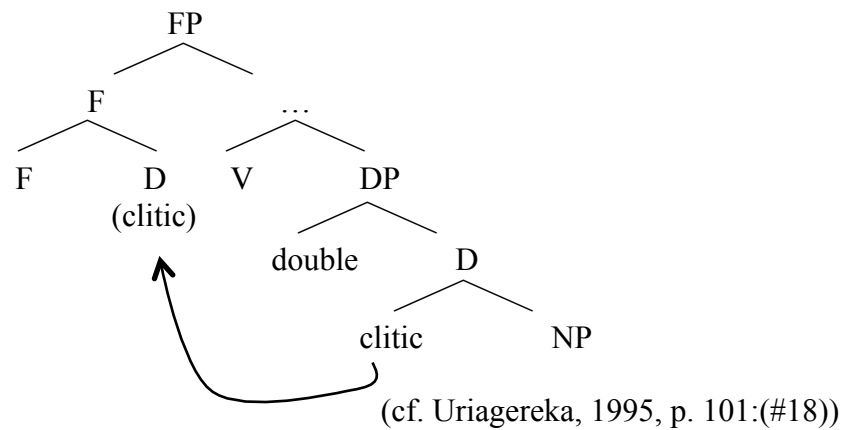
2.1.4 Big DP Approaches: Uriagereka (1995), Bleam (1999), Roberts (2010)

The Big DP Hypothesis is an early Minimalist approach (cf. Chomsky, 1993) to clitic doubling, originated by Uriagereka (1995) to account for clitic doubling in Romance languages. This popular approach has been subject to many revisions to account for language-specific data; two such analyses are discussed in this section (Bleam, 1999; Roberts, 2010). On Uriagereka’s original Big DP hypothesis, doubled clitics are generated as the head of D, with the doubled argument in Spec, DP. The specifics of the Big DP account are as follows.

Building on Uriagereka (1992) and Torrego (1988), clitics move out of their initial position and are right-adjoined to F, a functional projection above VP. Capturing observations

about Romance clitics, movement is restricted to clitics, which are inherently [+specific], as only specific information can be moved out of VP, following, e.g., Diesing (1990). Uriagereka argues that clitics lack a Person specification and move out of their base-generated position to a functional head F to obtain such a specification, as this projection interfaces with LF and thus encodes speakers’/subjects’ points of view. The clitic moves directly, forming a single-link chain. Ensuring the proximity of clitics to the verb, verbs also raise to T and are right-adjoined below clitics; this is motivated by feature-checking needs with verbs obtaining inflection for tense and agreement as they move. The following structure demonstrates the doubled clitic configuration and its movement to F; verb movement and some intermediary projections are omitted for simplicity.

(15)



The initial application of this analysis to Basque is not entirely problematic; there does not seem to be a reason that multiple clitics could not adjoin to F, and the anchor of AUX could move to F as well; ordering of clitics with respect to the anchor of AUX could be handled post-syntactically. It is not clear if underspecification of Person as a motivation for clitic movement is a benefit of this analysis, or a drawback. This observation could be capitalized upon to prevent 3rd Person ABS clitics from being licensed if, for instance, the clitic were to move and find its [Person] feature unable to receive the appropriate value, based on the full specification of its

doubled argument. The precise mechanisms by which [-participant] (3rd Person) ABS arguments are excluded would require some refinement.

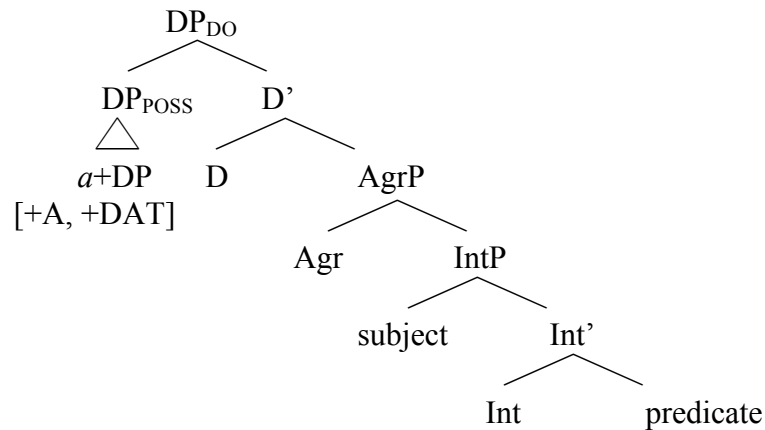
The drawback of appealing to underspecified Person is two-fold. Recall that, on the account proposed here, the Participant feature of the v Probe is relativized to seek a Goal with a Participant feature. I have argued that while all DAT DPs include a participant feature, 3rd Person ABS arguments do not. Further, the relativization of T with regard to this feature is not addressed. If the [Person] feature valuation of the clitic prevented the 3rd Person ABS clitic, why would this same mechanism not apply and prevent the generation of 3rd Person ERG and DAT clitics? Additionally, the lack of [Person] feature specification raises questions about the precise nature of the relationship between the clitic *in situ* and its double; it is unclear how the clitic would be able to obtain values for some features and not others. Assuming the approach to feature percolation proposed by Grimshaw (2005, p. 15), all head properties (lexical and categorical) should be shared under Extended Projection, and thus should easily percolate between the clitic and the double in this configuration. Finally, as with other analyses, it is not immediately clear how this configuration could account for observed PCC effects, if ABS and DAT clitics can both be generated in their proper DPs and do not compete for a position in F (as adjunction seems unlimited). This objection is of course based on an account of the PCC that attributes the effect to the interaction between doubled clitics; an alternative to the PCC which does not fault clitics could potentially bolster the utility of this model of clitic doubling. An expansion of the Big DP hypothesis to Basque (Arregi & Nevins, 2012) is explored in detail in Section 2.2 below.

Bleam (1999) analyzes direct and indirect object clitic doubling in Leista Spanish (northern Spain), suggesting like Uriagereka (1995) that both clitics and the arguments they

double originate within the same DP, with the clitic later moving out of that DP. The structure that she proposes is modified to account for distributional patterns in this dialect; specifically, clitic doubling with direct objects is only possible when doubled by the dative clitic *le* (as opposed to accusative *lo/la*). This form is restricted, arising when the direct object is introduced by *a*. Unlike Spanish indirect clitic doubling, which can freely occur in contexts with e.g., negative bare quantifiers, inanimate NPs, the appearance of *le* is subject to more restriction.

To account for the distributional restrictions of the direct object doubled clitic, Bleam adopts a DP-internal Integral Small Clause (Uriagereka, 1999), which introduces semantic factors limiting direct object clitic doubling environments; full discussion of the impact of the Integral Small Clause is outside of the scope of this discussion. Bleam (1999) offers the following structure for direct object clitic doubling constructions.

(16)



(Cf. Bleam, 1999, pp. 131-133:(#207; 210))

The structure in (16) is a compilation of Bleam's structures, showing clitic doubling of a direct object with an Integral Small Clause. The DP in Spec, DP_{DO} has the features [+A¹⁵, +DAT] that license it to appear in the specifier of a higher DAT phrase. This argument is spelled out as the doubled clitic when it moves to a higher functional projection. Its overt double appears as the

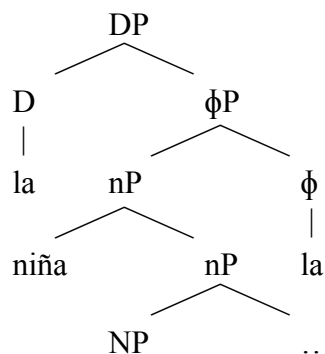
¹⁵ The feature [+A] means that DP is an event participant (Bleam, 1999, p. 131).

subject of the small clause in Spec, IntP. Note that this is not the grammatical subject of the sentence, but the argument of the predicate; the predicate of the small clause is a null element that ensures the above-referenced semantic factors are included.

The analysis that Bleam offers is specifically tailored to the Leísta dialect, and thus it is not directly transferable to Basque. Specifically, clitic doubling is not nearly as restricted in Basque and so there is no need for the DP-internal Integral Small Clause. Without this clause, the analysis shares some commonalities with the Big DP structure in (15); in both cases, the clitic moves to a higher functional projection. For Bleam, this is a Dative Phrase, motivated by the presence of [+DAT] features on the clitic. To extend this to Basque, it would have to be the case that a doubled clitic would be generated for the ABS, ERG, and DAT DPs, and that each of these DPs would require a case-related functional projection to which the doubled clitic moves, rather like what is proposed by Sportiche (1996), shown in (13) above. Although a DP-centric analysis seems to be a theme in early Minimalist accounts of clitic doubling, it will be shown in Section 2.2 below to be ultimately inadequate for Basque.

A more contemporary application of the Big DP structure is put forward by Roberts (2010). His structure is shown in (17).

(17)



(Roberts, 2010, p. 131:(#150))

In (17), the root of the overt doubled argument *niña* ‘girl’ raises to Spec, ϕ P, motivated by an uninterpretable N feature and an EPP feature on ϕ . The realization of the nP’s Phi features spell out as the doubled clitic. Note that *la* is represented twice in this structure: the lower instance is the doubled clitic, and the higher is the article in *la niña* ‘the girl’. Roberts uses facts about definiteness to show that the *la* in ϕ , not in D, is the clitic (specifically, definite, referential null objects are not allowed, thus the clitic cannot contain a D feature). Ultimately, cliticization occurs when ϕ (*la*) raises to vP, motivated by N features and EPP features; this is parallel to Roberts’ account of subject clitic doubling, where the relevant D and EPP features on T motivate clitic doubling.

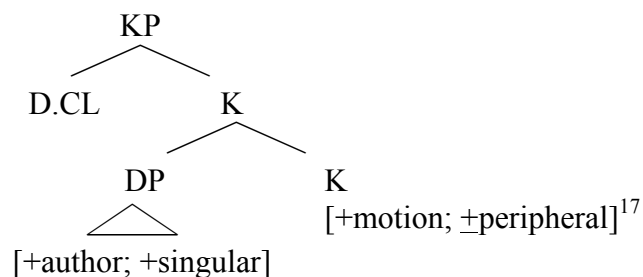
Roberts’ Big DP analysis is not immediately incompatible with Basque clitic doubling. Adapting this analysis, clitics would be Merged DP-internally, and would need to raise to a specific functional projection. For Basque, this could be T for ERG clitics, and v for ABS or DAT clitics. Unlike proposals in which each clitic is associated with a Case-related functional projection, clitics Move to functional projections that serve another purpose in the syntax (TP and vP). This opens up an avenue to understanding why ABS and DAT clitics cannot co-occur. It could be hypothesized (as I do below, following Arregi & Nevins (2012)) that the ABS and DAT clitics are in competition for a host (v), which can support only one clitic. There is not an immediate explanation for the absence of 3rd Person ABS clitics following Roberts’ analysis, but one could be engineered into the structure. Ultimately, the analyses reviewed in this section have proven to be tightly related to the facts of the language for which they are derived (and the theoretical frameworks in which they were derived), and as such are not easily extendable to the complex facts of Basque without detailed adaptation. To this end, I turn the Basque-specific Big DP-inspired approach to clitic doubling put forth by Arregi & Nevins (2012) in Section 2.2. In

the discussion, the syntactic drawbacks of this analysis are pointed out. Ultimately, this makes room for an alternative proposal for clitic doubling, the M-merger analysis (Section 3) that can account for the facts of Basque as well as several other diverse languages (proposed for Bulgarian by Harizanov (2014) and Amharic by Kramer (2014)).

2.2 Arregi & Nevins (2012): a new ‘Big DP’ analysis

Arregi & Nevins (2012) offer an analysis of clitic doubling specific to Biscayan Basque, which is applicable to Batua as well. They rely loosely on the ‘Big DP’ hypothesis for clitic doubling (cf. Torrego, 1992; Uriagereka, 1995, among others). According to this approach, doubled clitics are generated in functional projections above the DP that contain the argument that they double. Arregi & Nevins (2012) build on the Uriagereka-style Big DP structure described above, in which the clitic is generated and moved to a functional position higher in the structure. Rather than the hosting FP being much higher in the structure, Arregi & Nevins propose the clitic-hosting projection (KP¹⁶) immediately dominates the DP in which the clitic initially Merges. Their basic Big DP structure is shown in (18).

(18) Big DP for Basque doubled clitics



(cf. Arregi & Nevins, 2012, p. 54:(#10))

¹⁶ It is worth pointing out here that the functional projection governing DP need not be labeled KP; it could be labeled FP for Functional Projection or CIP for Clitic Projection with no consequence for the Big DP analysis. The label KP appeals to the utility of this projection in case assignment in Arregi & Nevins’ analysis.

¹⁷ These features reference the Case of the arguments: [-motion, -peripheral] = ABS; [+motion, -peripheral] = ERG; [+motion, +peripheral] = DAT (Arregi & Nevins, 2012, p. 7).

Minimally, the Arregi & Nevins Big DP structure consists of a functional projection above a DP. To derive the structure in (18), it is assumed that the DP Merges with an NP; this structure Merges with a KP. Arregi & Nevins posit that K hosts the features [+motion, ±peripheral] (depending on the sentential position of the Big DP), which ensures that the proper case (ERG or DAT) is realized in the morphology,¹⁸ the specifics of C/case assignment in Basque are discussed in detail in Chapter 3. The doubled clitic Merges in Spec, KP.

Arregi & Nevins (2012) propose that another functional projection appears between KP and DP in some Big DP clitic doubling constructions. Specifically, they claim that an intermediary projection PartP (“Participant Phrase”) appears in the context of 1st and 2nd Person arguments, in reference to the [+participant] feature these arguments include (as discussed in Chapters 2 and 3). The benefit of PartP is that it allows for flexibility along the lines of the Person feature, ensuring that 3rd Person ABS clitics are not erroneously generated. A brief overview of ERG, DAT, and ABS clitic doubling via DP will illustrate this point.

This analysis draws a distinction between ERG/DAT DPs, on one hand, and ABS DPs, on the other. Arregi & Nevins’ view of case assignment diverges from the standard Minimalist Case-via-Agree assumptions; rather, case is determined in the morphology based on the combination of the features [+motion, ±peripheral] associated with the DP (and its clitic) when it is shipped out from the syntax. ERG and DAT differ in the value of their [+peripheral] feature. In contrast, ABS is a morphological default (Legate, 2008; Marantz, 1991) realized when a (Big) DP lacks a [+motion] feature. Thus, KP is projected in Big DPs only for ERG and DAT arguments.

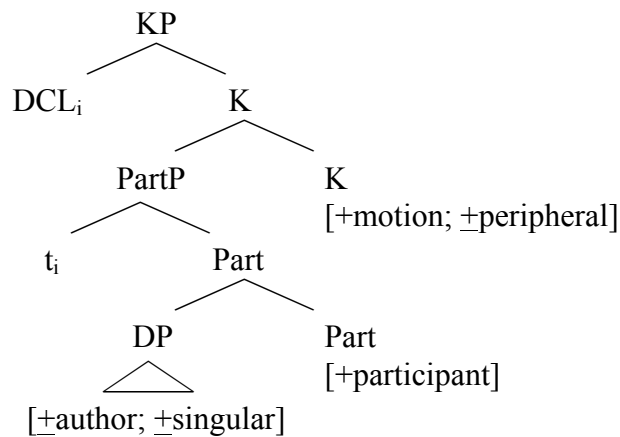
There are two sets of binary options, then, in the construction of a Big DP: KP can be

¹⁸ Arregi & Nevins analyze ABS case as a morphological default, arising in the context of [-motion, -peripheral] features.

present (if ERG/DAT) or absent (if ABS), and PartP can be present (if 1st/2nd Person) or absent (if 3rd Person). From the available combinations, a situation arises in which doubled clitics for all Person feature values can be generated for ERG and DAT arguments, but limits ABS doubled clitics to 1st/2nd Person contexts.

First, consider a Big DP with both KP and PartP: this yields 1st/2nd Person ERG or DAT doubled clitics.

(19) KP > PartP > DP: 1st/2nd Person ERG/DAT doubled clitics



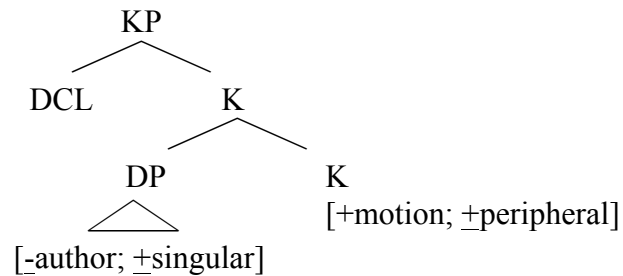
(cf. Arregi & Nevins 2012)

The DP argument being doubled is specified for [+author, ±singular] features to determine Person and Number. This DP Merges with PartP, which is projected because the feature [+participant] is present (i.e., the DP is 1st or 2nd Person). KP Merges with PartP, hosting Case features in its head that ensure that the DP will be realized as ERG or DAT. The doubled clitic initially Merges in Spec, PartP, and raises to Spec, KP; the motivation for this movement (e.g., an EPP feature) is unclear. Although Arregi & Nevins do not precisely specify how the clitic obtains the Phi/Case features of the DP argument it doubles, in this configuration they could be obtained simply via feature percolation (Grimshaw, 2005).

Next, consider a structure that lacks PartP ((18) repeated as (20) here); this structure

yields 3rd Person ERG and DAT doubled clitics.

(20) KP > DP: 3rd Person ERG/DAT doubled clitics

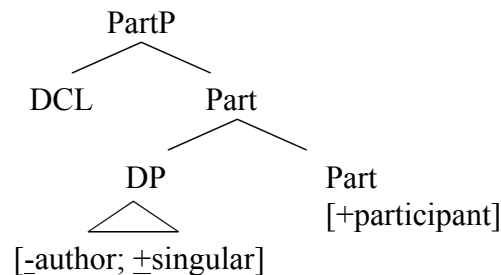


(cf. Arregi & Nevins, 2012)

As discussed above, the lack of PartP restricts this structure to 3rd Person arguments; the presence of a KP ensures that case will be realized in the morphology, meaning the argument will surface as ERG or DAT. The doubled clitic Merges directly in Spec, KP and (presumably) receives case and Phi features via feature percolation.

Finally, consider a structure in which KP is lacking, but PartP is present. This structure applies to 1st/2nd Person ABS arguments, ensuring they can yield doubled clitics.

(21) PartP > DP: 1st/2nd Person ABS doubled clitics



(cf. Arregi & Nevins, 2012)

In (21), PartP is projected due to the [+participant] feature, giving the doubled clitic a place to Merge in Spec, PartP. The lack of KP means that the argument will be realized as the morphological default case, ABS.

Given these combinations, the lack of 3rd ABS doubled clitics in Basque can be attributed to the availability of the functional projections that allow clitic doubling. Doubled clitics can be Merged in Spec, PartP, but 3rd Person arguments lack this projection; doubled clitics can be Merged in Spec, KP, but ABS arguments lack this projection. Thus, there is no Big DP for 3rd ABS arguments that would allow clitic doubling, which is exactly what is observed for the language. This leaves the anchor of AUX in a left-most position that triggers the insertion of the L-morpheme /d-/ at MS.

The Big DP approach to clitic doubling that Arregi & Nevins (2012) put forth for Basque is beneficial in that it accounts for the lack of a true 3rd Person ABS clitic in a straightforward, structural way. However, there are several conceptual issues with the proposed functional projections.

Concerning PartP, this projection is motivated by appealing to PhiP, as proposed by Déchaine & Wiltschko (2002). PhiP was envisioned as a functional projection that immediately dominates NP; in its original instantiation, DP dominates PhiP in some cases, while in other cases the DP layer is not projected. The purpose of this is to capture a three-way contrast in pronouns, which is summarized in Table 2.

Table 2. Nominal proform typology

	Pro-DP	Pro-PhiP	Pro-NP
<i>Internal Syntax</i>	D syntax; morphologically complex	neither D syntax nor N syntax	N syntax
<i>Distribution</i>	argument	argument or predicate	predicate
<i>Semantics</i>	definite	---	constant
<i>Binding-theoretic</i>	R-expression	variable	---

(Déchaine & Wiltschko, 2002, p. 410:(#2))

Arregi & Nevins do not comment on how clitics with PartP align with the properties of a Pro-PhiP, though a cursory investigation suggest that the typology offered in Table 2 do not quite

align. Syntactically, doubled clitics are D, and the objects they double are arguments, aligning them more closely with Pro-DP structure. Further, Arregi & Nevins do not explain their motivation for positioning this projection above the DP.

Finally, if the [+participant] feature does engender its own phrase, there are broader ramifications than the ability to generate a doubled clitic. A Person Phrase (π P) has been proposed before, but its function is not to generate doubled clitics but rather to host a Person Probe in situations where Person and Number Probe separately (e.g., Béjar & Rezac, 2003; Béjar, 2008; Preminger, 2011b; Rezac, 2003).

Arregi & Nevins do not detail the nature of the PartP that they propose, but it does not seem to serve any Probing function comparable to phrases like π P, nor is it likely meant to. PartP differs from π P in that it is generated by interpretable [\pm participant] features of the DP, instead of splitting the uninterpretable Phi features of another Probe (e.g., v). However, this issue is worth consideration, especially with an eye toward the possible interaction between PartP and π P. Further considering the impact on Probing, it is unclear whether the [\pm participant] feature in PartP would be the target for Agree, or if the Probe overlooks supra-DP features, or if this would matter at all.

Another issue is the role of the features [\pm motion, \pm peripheral] in Case determination. Calabrese (2008) posits these features to explain morphological case paradigms; they are not intended to do anything syntactically. Presumably, they are interpretable features because they need not be valued or deleted in the syntax (though this is not known for a fact), but they lack a semantic interpretation, calling into question their utility at LF. Further, they are not involved in any syntactic operations (i.e., they do not Agree with uninterpretable [motion, peripheral] features); their only role is to meet the selectional requirement for ERG and DAT arguments by

the functional heads in whose specifiers they Merge (Spec, vP and Spec, ApplP, respectively). Arregi & Nevins (2012) rely heavily on these features to explain case, but they receive no independent motivation beyond this; they do not offer an explanation for why these particular feature values, which seemingly lack relation to semantic interpretation, were those identified to play these roles in c-selection and Case.

Turning to KP, the use of this projection with relation to Case assignment is at best unclear. For Arregi & Nevins, ERG Case results from the Merging of a DP into the [+motion, -peripheral] KP selected for in Spec, vP. This seems akin to inherent Case assignment, which is also accomplished via Merge into a certain syntactic position (Woolford, 2006) without any reliance on Agree whatsoever. Even in situations where structural Case assignment is related to specific syntactic positions (e.g., ACC Case); there is the further requirement that the DP argument enter into an Agree relation with a Case-assigning functional head (e.g., v).

However, Arregi & Nevins argue that this is not an instance of inherent Case assignment based on e.g., raising constructions (Rezac et al., 2014, p. 1290:(#21b)):

- (22) Jon-ek eta Miren-ek etorri behar d-u-te
 Jon-ERG and Miren-ERG come must L-have.3S-3P.ERG
 ‘Jon and Miren must come’

In (22), an unaccusative predicate, *Jon-ek eta Miren-ek*, raises from the internal argument position to Spec, vP of the main clause. For Rezac et al., this argument receives Case and is represented by a doubled clitic Agree with T_{ERG} and subsequent movement to Spec, TP, which itself hosts a KP that ensures ERG Case. As inherent Case is assigned upon initial Merge, the fact that this predicate raises to an ERG position is evidence for a structural approach to ERG Case.

On Arregi & Nevins' analysis that ERG Case comes from KP in Spec, vP, these raising data can also be accommodated, with the ultimate destination of the Moved DP changing from Spec, TP to Spec, vP. However, their use of KP for Case is still a departure from conventional Government & Binding instantiations of KP (Bittner & Hale, 1996; Travis & Lamontagne, 1992); for example, the K head does not Spell Out as the Case marker, though the Spell Out of the ERG Case marker could be accounted for post-syntactically. It is also not particularly adaptable to Minimalist approaches structural Case assignment mechanisms (i.e., Agree); although it may not be Arregi & Nevins' intention that K 'assign' ERG Case, I consider the ability to assign Case via Agree a cross-linguistic desideratum and therefore suggest an analysis which – although it also involves K – does rely upon the Agree relation.

Issues of Case aside, the true utility of KP in Arregi & Nevins's analysis lies in the fact that it provides a place for Merging ERG and DAT doubled clitics, while prohibiting (some) ABS arguments from generating doubled clitics. Given the concerns about both PartP and KP, the present analysis offers an approach to clitic doubling that does not rely on additional functional projections above DP. The remainder of this chapter proposes an analysis of clitic doubling in Basque that can account for: the lack of 3rd Person ABS clitics; AUX agreement referencing only the ABS argument; and PCC effects.

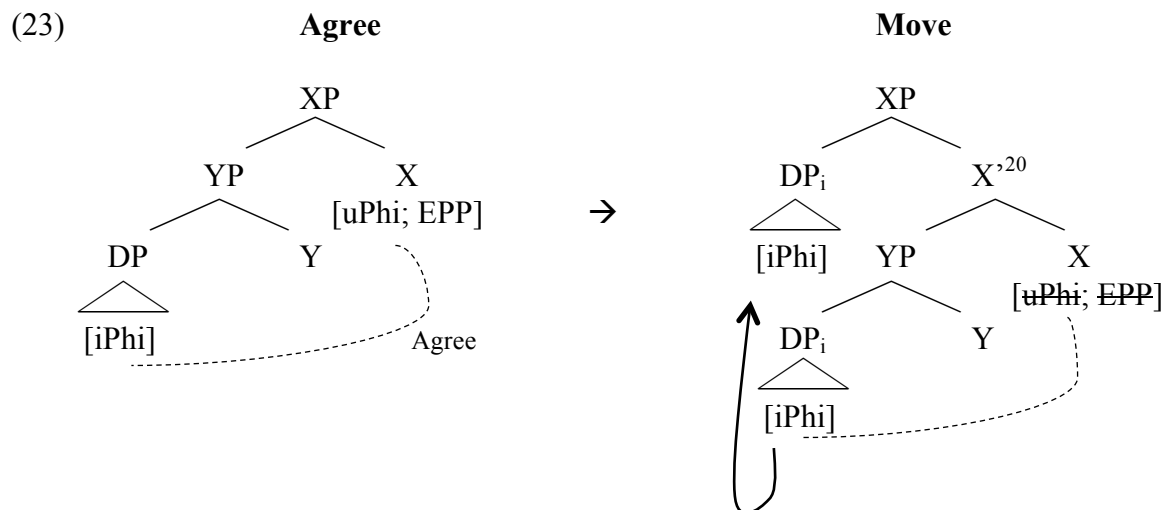
3 M-merger analysis of Basque clitic doubling¹⁹

This section analyzes doubled clitics as syntactic objects heads that share the features of the arguments that they double. However, this analysis moves away from the Big DP-inspired extended functional projections (KP, PartP) that Arregi & Nevins use, assuming instead that clitics are in fact an alternatively spelled out copy of the argument that they double (Harizanov,

¹⁹ This analysis was originally presented as Siebecker & Kramer, (2014).

2014; Kramer, 2014). The copies are reduced and form complex heads with related functional projections via M-merger (Matushansky, 2006), giving them mobility in the syntactic structure. The relationship between the arguments and functional heads is Agree; this reinforces the agreement-like nature of doubled clitics while allowing them to appear as (loosely) independent syntactic entities.

The M-merger approach to clitic doubling is a three-step process; initially, a DP enters into an Agree relation with a functional head, and Moves to the specifier of that head, as shown in (23).



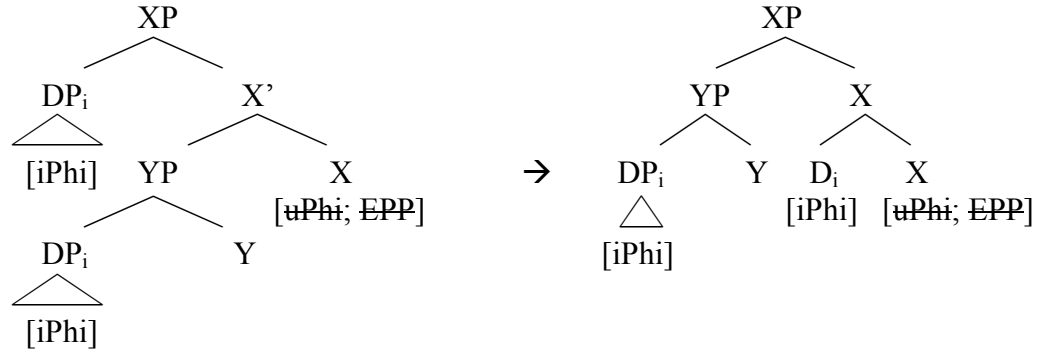
In the structures in (23)²¹, the functional head X enters into an Agree relation with the DP complement of Y; the uninterpretable Phi features of the functional head are valued, and the DP raises to Spec, XP motivated by the EPP feature on X. The DP leaves a copy in its original position (Kramer, 2014).

After Moving to Spec, XP, the higher DP copy undergoes M-merger: the DP is reduced to D, and forms a complex head with the functional head with which it agrees, as shown in (24).

²⁰ The X' notation here is simply to emphasize the fact that the moved DP is not an adjunction.

²¹ The trees here are head-final since Basque is head-final; the success of clitic doubling does not hinge on this fact.

(24)



Note that the ability of a full DP to reduce to D diverges from Matushansky's original implementation of M-merger, which applied to non-branching maximal projections; the DP/D reduction follows Harizanov (2014), who suggests that branching maximal projections are eligible for M-merger as well. From its new position, the doubled clitic (D) is able to Move about the syntactic structure along with the functional head to which it is attached.

The final step of this analysis of clitic doubling deals with the pronunciation of the original DP and the DP/D doubled clitic. Both 'copies' of the DP are pronounced at PF: the full DP, the sister of T, and the reduced D, adjoined to X. It is expected (and observed, in Basque) that both copies will be distinct, cf. Kandybowicz, (2007), and earlier work on the copy theory of movement (Bošković & Nunes, 2007; Landau, 2006; Nunes, 2004).²²

Having introduced the M-merger operation in theory, the following sections demonstrate its application to Basque, motivating language-specific extensions and restrictions. Recall that the Basque AUX can host clitics doubling three separate arguments: the ERG (transitive subject), the ABS (intransitive subject/transitive object), and the DAT (ditransitive indirect object). Given

²² From Siebecker & Kramer, (2014):

In Kandybowicz, (2007), a pair of expressions A and B are non-distinct if they (i) form a chain and (ii) are morphosyntactically isomorphic (Kandybowicz 2007:141, (31)). The full DP sister to V and the 'reduced' D adjoined to *v* form a chain, but they are not morphosyntactically isomorphic in that the top copy is a head and the bottom copy is a phrase. Therefore, the two copies are distinct and they are both pronounced at PF (more technically, they are not subject to the operation Chain Reduction that deletes non-distinct copies before linearization).

the basics of the M-merger presented above, the desiderata to be addressed by this analysis can be stated as follows:

- (25) What Agree relationships need to occur to generate ABS, ERG, and DAT doubled clitics via M-merger, while ensuring that:
- a. ABS 3rd Person doubled clitics are not inadvertently generated
 - b. the split between ERG Case and agreement (clitic doubling) is respected
 - c. the PCC is not violated

This section will answer these questions by showing how AUX is derived in three contexts.

Section 3.1 will analyze the intransitive AUX, addressing (25a); Section 3.2 will analyze

transitive AUX, addressing (25b); Section 3.3 will analyze ditransitives, answering (25c);

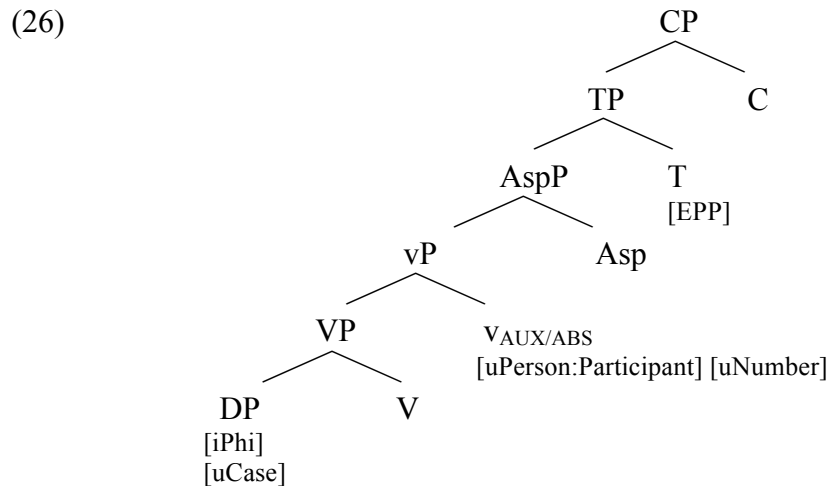
Section 3.4 will address complications that arise in applicative intransitives where the PCC is not always observed, also addressing (25c). It is also necessary to clarify the interaction between Agree and C/case assignment, ensuring that all DPs are properly licensed but that agreement on the anchor of AUX is triggered by the ABS argument alone; this was addressed in Chapter 3.

To summarize the Case/agreement arguments from Chapter 3, it was claimed that ABS and ERG Case are assigned structurally, via Agree with v and T, respectively. These heads are parameterized as to their ability to assign Case, with T deactivated in intransitives, and v deactivated in intransitive unergatives. DAT Case is inherent, assigned to a DP Merged as the complement of a PP in Spec, ApplP. Agreement patterns were explained by dividing the Agree operation into syntactic and morphological components. Agree-Link occurs in the syntax, and is the relationship ultimately underlying clitic doubling, as will be shown in detail below. Agree-Copy occurs in the morphology and is responsible to the features that are spelled out on the anchor of AUX; it was claimed that only ABS arguments are accessible for Agree-Copy, explaining why the ERG and DAT arguments' features are never observed on the anchor of AUX.

3.1 Intransitive AUX: ABS doubled clitics

This section derives intransitive AUX, which hosts a 1st or 2nd Person ABS doubled clitic in the leftmost position, followed by the anchor morphemes (v and T), with v showing agreement with the ABS argument. The analysis suggested here prevents the overgeneration of 3rd ABS clitics by appealing to the nature of the Probe (v) that Agrees with the ABS argument.

The following (partial) structure is proposed for unaccusative intransitive clauses in Basque, as presented in Chapter 2.

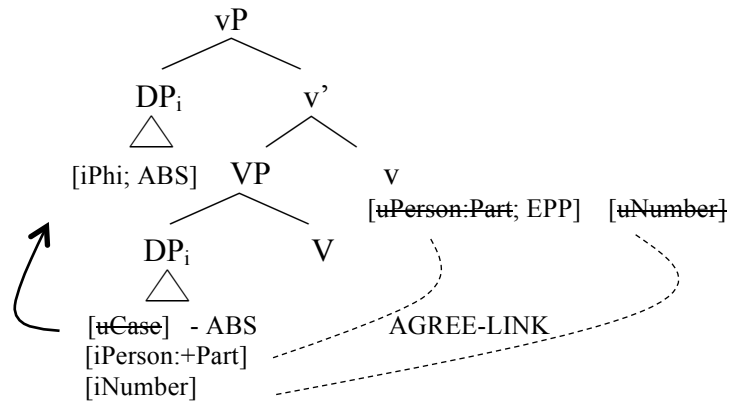


In (26), a DP Merges an internal argument position, as the complement of V. VP is the daughter of vP, which consists of multiple v heads, omitted here for clarity. vP is the daughter of AspP, which is selected by TP. Note that the feature specifications [uPerson], [uNumber], and [iPhi] stand in for the bivalent features assumed on this analysis where the precise feature specifications do not matter to the analysis. Features are specified where necessary (e.g., [+participant]).

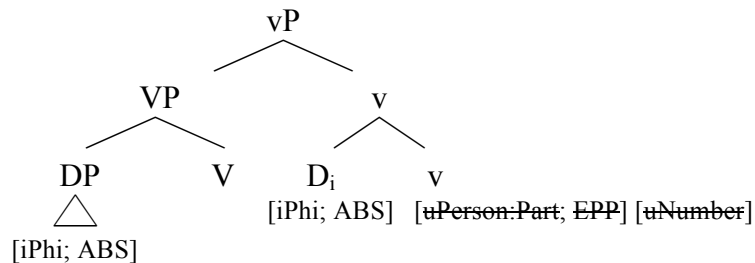
As mentioned above, T is not a Case-assigning head in intransitives (Anand & Nevins, 2006; Rezac et al., 2014). However, v_{ABS} is active and is a split Phi Probe, searching separately but concurrently for Number and Person (relativized to seek a Participant feature). These Probes

find the internal argument. Agree-Link with the Number Probe results in the assignment of ABS Case; when the argument is 1st/2nd Person, it Agree-Links with the Person Probe and a doubled clitic is Merged as follows.

(27) a. **Agree + Move:** internal argument DP & v



b. **M-merger:** ABS doubled clitic & v



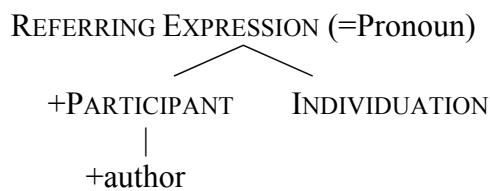
The structures in (27) show the derivation of ABS doubled clitics in simple finite intransitive clauses. In (27a), the Number Probe Agree-Links and assigns ABS Case; the Person Probe finds an argument containing the Participant feature it needs and Agree-Links as well. These relations arise simultaneously; if Person Probed first, the argument would be rendered invisible to further Agree by virtue of generating a clitic doubling, and Number would not be able to Agree-Link. This would predict a lack of Number agreement on the anchor of AUX when ABS clitics are

generated, which is not observed.²³ Once these Agree-Link relations arise, a copy of the DP raises to Spec, vP due to the EPP feature on the Person Probe. In (27b), M-merger occurs: the higher DP copy is reduced to D, and forms a complex head with v.

The relativization of the Person Probe can account for the lack of 3rd Person clitics in Basque. Recall that 1st and 2nd Person ABS arguments are doubled by clitics on AUX, but 3rd Person ABS arguments are not. As indicated by sensitivity to Tense (among other non-Phi feature factors), the morpheme that appears in the ABS doubled clitic position in 3rd Person contexts is better analyzed as an L-morpheme and inserted post-syntactically to avoid violating a morphological constraint. This distinction suggests that clitic doubling facilitated by v is sensitive to the feature [Person].

As discussed in Chapters 2 and 3, the [Person] feature can be decomposed into several features in an entailment relation (Adger & Harbour, 2007; Adger, 2006; Harley & Ritter, 2002), whether features are viewed as privative or bivalent. The geometry in (28) is based on that of Harley & Ritter (2002, p. 486:(#6)), but updated for the features assumed in this analysis

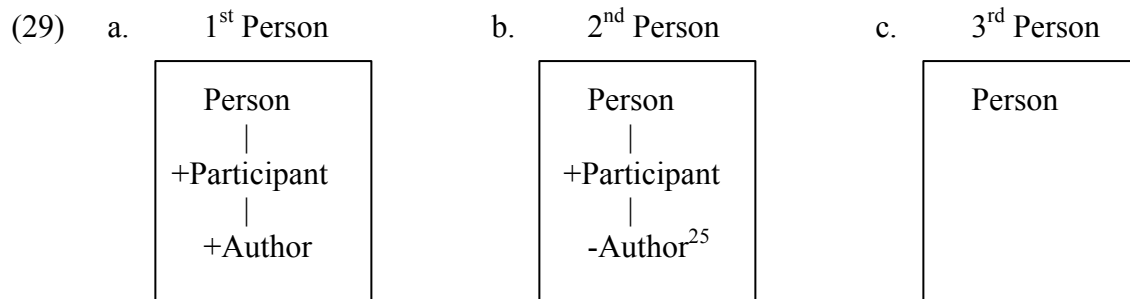
(28) Morphosyntactic Feature Geometry (for 1st/2nd Person)



In this configuration, 1st Person ([+author]) and 2nd Person ([-author]) arguments are entailed by the presence of a [+participant] feature. 3rd Person, the unmarked value, can be indicated in one of two ways: first, by the absence of a Participant feature altogether; or second, by a negatively-

²³ Alternatively, Number could Probe first without immediate ramification to this analysis, though Probe ordering is critical in some analyses.

valued [-participant] feature (Adger & Harbour, 2007).²⁴ Adopting this view of Person features allows the flexibility needed to contrast the behavior of 1st/2nd Person ABS arguments ([+participant]) with 3rd Person ABS arguments (no [Participant]). Based on this feature hierarchy, the following feature specifications are proposed for Person for ABS arguments.

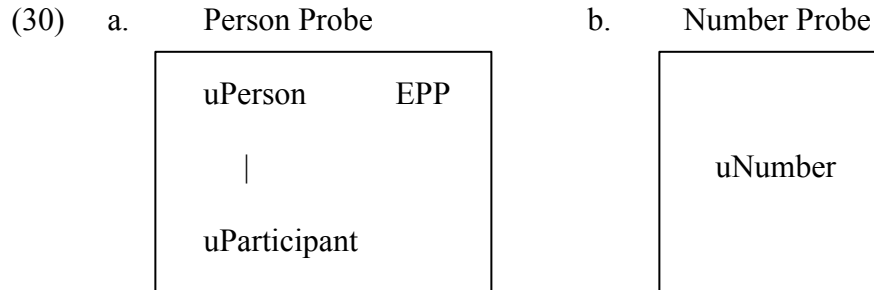


With this view of Person features, the M-merger analysis of clitic doubling has the potential to encode the lack of 3rd Person ABS clitics directly, and in a cross-linguistically motivated way. It is not uncommon for languages to only agree with 1st and 2nd Person arguments (Baker, 2008; Béjar, 2008). For Basque, the generation of doubled clitics is predicated on the presence of a Moved DP copy in the specifier of its Agreeing functional head; for ABS arguments, this means that Agree must occur between the DP and v. If Agree is unavailable, the copied DP cannot undergo Move and be reduced to a doubled clitic via M-merger. Therefore, 3rd Person doubled clitics can be avoided if they do not Agree with v; specifically, there is not Agree between the Person Probe on v and DPs that lack a [Participant] feature in Basque.

²⁴ Recall that in Chapter 2, ABS arguments were posited to lack a [Participant] feature, while DAT arguments, which are subject to animacy preferences, were argued to have a negatively-valued [-participant] feature.

²⁵ Alternatively the [-author] feature could be omitted from the 2nd Person feature bundle, given that Basque does not have an inclusive/exclusive distinction and this feature (though characterized as the absence of a privative Speaker feature) has been cited as the source of that distinction (McGinnis, 2005).

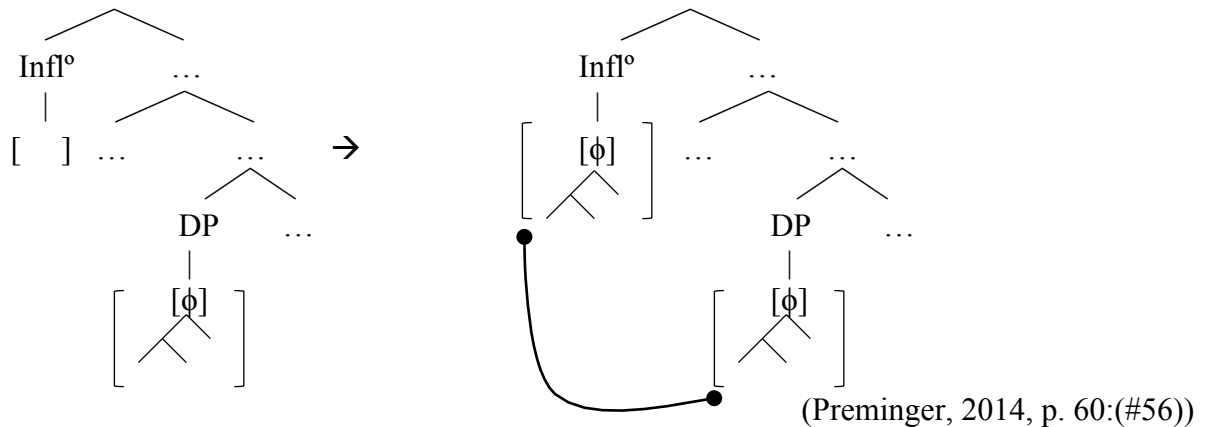
This restriction on Agree can be formalized as follows: *v* consists of multiple Phi Probes on a single head that probes separately for Person and Number; in this case, the uninterpretable features included in each Probe are listed distinctly.



The schematic in (30) shows the multiple Phi Probes posited for *v* in Basque. The Number Probe is very simple: it searches for any Goal with a Number feature, with Agree ensuring that either Singular or Plural feature will be represented on an agreement morpheme. The Person Probe is more specific: it targets only those Goals specified with a [Participant] feature—only 1st or 2nd Person arguments—and will not Agree with 3rd Person arguments lacking a [Participant] feature, as shown in (29c). Since it is the Person Probe that contains the EPP features of *v*, a 3rd Person argument cannot Move to Spec, *v*P, and thus the DP cannot undergo M-merger with *v* and no doubled clitic will be generated.

This is contingent on Person and Number features Probing separately, which is not a new proposal (see e.g., Adger & Harbour, 2007; Béjar & Rezac, 2003; Preminger, 2014 for other instances of split Phi Probes). In addition to splitting the *v* into separate Phi Probes, this analysis suggests that the Person Probe seek Goals with specific feature specifications. This suggestion is akin to *Relativized Probes* (Nevins, 2007; Preminger, 2014; Starke, 2001), which are specified to Probe for certain subsets of the feature geometry as shown in (31).

(31) Valuation as a feature-geometric notion



An immediate repercussion of this analysis is that it requires v to be satisfied by having only one of its two Probes Agreed with. In 1st/2nd Person contexts, both Number and Person Probes Agree with the internal argument, but in 3rd Person contexts, the Person Probe fails to Agree. On some theories of split Phi Probes, it would be expected that the Person Probe keep searching for a Goal, looking even in its own specifier if necessary (Adger & Harbour, 2007; Béjar & Rezac, 2003; Rezac, 2003). However, in intransitive constructions there are no other potential Goals, and the derivation does not crash. This suggests that only partial valuation is sufficient for Agree and Case assignment in Basque, which may be a source of variation among Probes and among languages (Siebecker & Kramer, 2014). Notice that the failure of the Person Probe to find a Goal does not seal the fate of the derivation; this Probe simply receives default features (Preminger, 2014).

Before moving on, recall that Rezac et al. (2014) claim that in intransitive clauses, the ABS internal argument raises to Spec, TP after Agreeing with v and receiving Case. T cannot assign ERG Case to this argument, as it already bears ABS Case. However, this raises a question about why T does not generate a (second) clitic doubling this argument. This question arises because this process (Agree with T, DP Movement to Spec, TP) is precisely what will be

proposed for the generation of ERG clitics below. I suggest that not all T can generate a doubled clitic. Recall that Rezac et al. claim that in transitives, a T_{ERG} Merges, which can affect ERG Case and agreement; in intransitives, a different T Merges. Thus, despite the similarities observed in the movement of the internal argument in intransitives and the external argument in transitives, clitic doubling can only be initiated by T_{ERG} , and therefore a second doubled clitic does not arise.

This section has shown that the M-merger analysis can account structurally for the lack of 3rd Person ABS doubled clitics in Basque. By positing that the Probe v is split for Person and Number, and further positing that the Person Probe includes a [participant] feature and EPP feature, it is ensured that 3rd Person ABS arguments cannot Move to a position from which they can undergo M-merger, preventing the overgeneration of 3rd Person ABS doubled clitics.

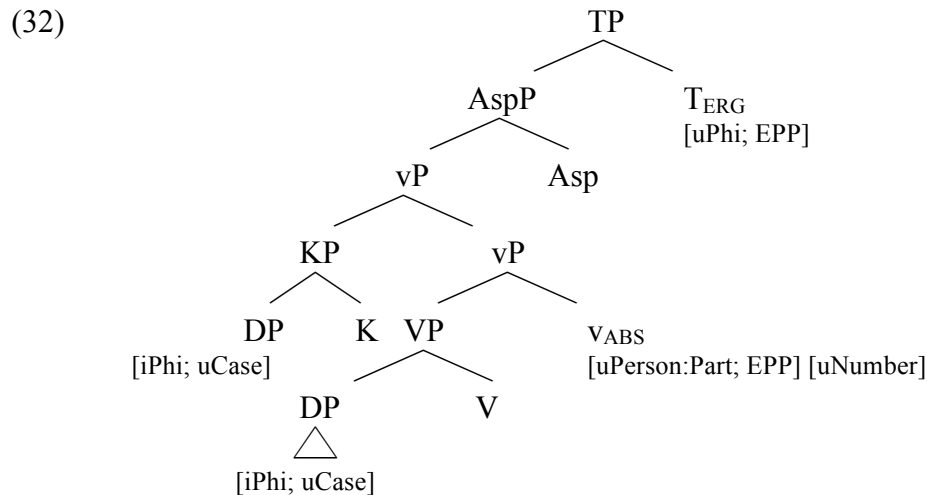
This analysis also offers additional evidence for the characterization of 1st/2nd Person ABS morphemes on AUX as doubled clitics, and for the claim that /d/ (in 3rd Person contexts) is not a doubled clitic, following Preminger's (2009) guidelines for agreement failure. Preminger claims that when agreement fails, potential doubled clitics are absent, while potential agreement markers arise with default features. In the case of the split Probe on v , we see that full agreement fails to obtain with 3rd Person arguments, and a clitic with default features is not inserted (Arregi & Nevins, 2012). Rather, the position of the doubled clitic remains unfilled, evidenced by the insertion of the L-morpheme /d/ at MS.

3.2 Transitive AUX: ABS & ERG doubled clitics

This section derives the transitive AUX, which includes ABS doubled clitics (1st/2nd Person), anchor morphemes showing agreement only with the ABS argument, and an ERG doubled clitic. The analysis here builds on the one proposed for intransitives above, suggesting

that ERG doubled clitics are generated via M-merger with T as the facilitating functional head. Due to the separation of Agree-Link and Agree-Copy, anchor agreement facts can be explained while maintaining the M-merger analysis.

The following structure is proposed for transitive clauses.



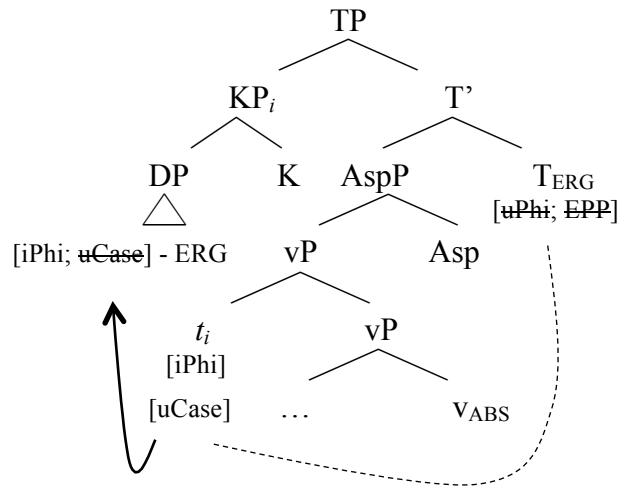
The transitive clause introduces a subject DP in the external argument (EA) position, Spec, vP. Note that this DP is the complement of K. The object DP is Merged as an internal argument. As in intransitive clauses, v contains split Phi Probes that separately target the Person and Number features of the Goal in its domain (the object DP), with the Person Probe looking specifically for a Goal with a [Participant] feature. The object DP has an uninterpretable Case feature valued as ABS via (even partial) Agree with either Probe on v, and values the uninterpretable Phi features on that Probe. If the Person Probe finds a Goal in the DP, a doubled clitic is generated via M-merger as described above. If not, no doubled clitic is generated. For full expository purposes, 1st/2nd Person ABS arguments will be used in the remainder of this section. Note that subsequent movement to Spec, TP does not occur because of the higher EA.

Turning to the generation of the ERG doubled clitic, the landscape changes somewhat. At first glance, it seems that the M-merger process (Agree, Move a copy, reduce to D, form

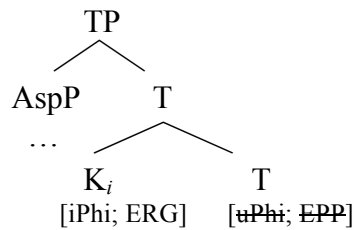
complex head) is in conflict with the proposal of Rezac et al. (2014) that was adopted to account for structural ERG Case assignment. Recall that Rezac et al. make a distinction between ERG Case (the marker /*(e)k*/ on the DP) and ERG agreement (the morpheme on AUX, which I consider a doubled clitic). Specifically, they proposed that ERG agreement arises as a result of Agree between an external argument that Merges in a KP in Spec, vP and T_{ERG}, while ERG Case requires subsequent movement of the KP+DP to Spec, TP. This is in direct opposition to the M-merger analysis, which attributes clitic doubling (i.e., ERG agreement) to Copy-Move of the DP to Spec, TP.

Therefore, a modification of M-merger is proposed. In the more common situation, where ERG Case on the DP and ERG clitic doubling on AUX align, the procedure is as expected – Agree + Move of the KP + DP to Spec, TP, which ensures ERG Case on the analysis of Rezac et al. (2014). From this position, M-merger occurs as the whole KP reduces to K and forms a complex head with T; this is spelled out as the ERG clitic. Nothing remains in Spec, TP after KP reduces to K; however, the movement of KP to Spec, TP is sufficient to satisfy the selectional requirements of T_{ERG} even if the KP does not spell out there. Note that this instance of clitic doubling differs from the ABS context, in that that clitic here is of the category K. The category feature of the clitic will be addressed in the morphology (Chapter 5). Finally, a trace of the KP+DP remains in Spec, vP. This copy is spelled out as the full DP. This process is shown in (33) below.

(33) a. **Agree + Move:** external argument DP & T



b. **M-merger:** ERG doubled clitic & T



The structures in (33) show ERG Case assignment and the generation of the doubled clitic in instances where DP Case marking and AUX form align. Note that this is what arises in the large majority of cases.

Instances in which ERG Case marking and AUX form do not align are far rarer; these mismatches come in two forms.

(34) a. Ni-k liburua-k irakurri n-itu-en
I-ERG book-P.ABS read 1S.ABS-have.3P-PAST
 ‘I read the books’

(Laka, 1993a, p. 55:(#54b))

b. Museo-ak geratu behar d-u-te kultur ondarea ez galtzeko
 Museum-P.ABS remain must L-have.3S-3P.ERG culture heritage not to.be.lost
 ‘There must remain (some) museums in order for cultural heritage not to be lost’

(Rezac et al., 2014, p. 1299:(#32b))

In (34a), we see the appearance of the ERG Case marker on the DP, but the argument is seemingly doubled by an AUX-initial (ABS) clitic and not by an AUX-final (ERG) one. As will be discussed in Chapter 5, this is unproblematic for the approach to clitic doubling here, as this operation is post-syntactic. For the purposes of the syntactic representation, Case assignment and clitic doubling in (34a) proceed as in (33) above, with an ERG doubled clitic on T being sent off from the syntax.

In (34b), however, the DP argument is marked ABS and yet an ERG clitic doubles it; this pattern holds for a subset of unaccusative verbs when they appear in the INF + *behar* structure and leads to an existential interpretation. These constructions lead Rezac et al. to posit that ERG Case assignment requires subsequent movement of a KP + DP to Spec, TP, while ERG clitic doubling can be accomplished via Agree alone, with the KP-less DP remaining *in situ*.

Based on the availability of different interpretations in unaccusative INF + *behar* constructions, Rezac et al. claim that while T_{ERG} Agree(-Links) with the external argument always occurs, subsequent movement to Spec, TP is optional. When the DP does Move, it surfaces with ERG Case, and when it does not, the DP surfaces with ABS Case and allows only an existential interpretation. The question for the M-merger analysis, then, is how a doubled clitic appears when Move does not occur and the DP surfaces with ABS Case.

The structure that Rezac et al. propose for these ABS Case/ERG clitic constructions Merges an expletive in Spec, TP when the DP fails to Move, to satisfy the EPP feature of T_{ERG} . I suggest that the null expletive that is Merged matches the featural specification of the external argument DP, at least in Number; and it is the expletive that undergoes M-merger. This is shown in (35).

(35) a. Pintxo (on-)a-k egon behar d-u-te mahai gainean
Pintxo (good)-the-P.ABS be(LOC) must L-have.3S-3P.ERG table on.the.top
 ABS: Existential only: ‘There must be (good) pintxos on the table (if people are to come)’

(Rezac et al., 2014, p. 1301:(#34b))

b. Hemen sagardo on-a-ø egon behar d-u-ø
 Here cider good-the-S.ABS be(LOC) must L-have.3S-3S.ERG
 ABS: Existential only: ‘There must be good cider here’

(Rezac et al., 2014, p. 1301:(#35b))

In (35a), the external argument is plural, as is the ERG doubled clitic; in (35b), both are singular. This is possible if the expletive in (35a) is specified with a plural feature and the expletive in (35b) is specified a singular. Admittedly, this claim is contra what is assumed about e.g., the expletive *there* in English, which is presumed to include Case features but lack Phi features (Groat, 1995). However, the expletive *it* is understood to include Phi features (Groat, 1995), and therefore this claim for Basque is not without basis.

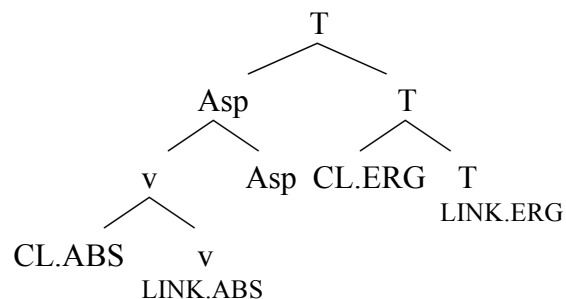
An alternative view suggests that some expletives Merge alongside the argument for which they stand in in T. The review in Hartmann (2008) cites Moro (Moro, 1991, 1997, 2006) as suggesting that expletives are Merged in small clauses with their associated noun phrases, and the expletive Moves to Spec, TP in lieu of the NP. By this means, features can be shared between the expletive and the NP. Applied here, this would suggest that when a DP Merges in Spec, vP without a KP (meaning, it can never surface with ERG Case marking), it could Merge within a small clauses including an expletive. The expletive, with the features of the small clause DP, would raise to Spec, TP and undergo M-merger; it would spell out as a doubled clitic. This sketch is far from complete; further exploration into the implications of this assumption is left for future research, but it offers a promising solution to instances in which ERG DP marking and clitic doubling diverge.

More broadly, I suggest that T_{ERG} seeks to perform M-merger on whatever is in its specifier. When the KP+DP Moves to Spec, TP, a copy will be reduced to K and form a complex head with T_{ERG} and will spell out as an ERG doubled clitic; when an expletive Merges in Spec, TP, a copy of this will still reduce and form a complex head with T_{ERG} . The copy of the expletive will contain the same feature inventory; as the features of the expletive correlate with the non-Moving DP, so too will the features of the clitic doubling the expletive. This gives the impression that the ABS DP is being doubled by an ERG clitic, which would present a challenge for M-merger on the movement-based approach to ERG Case proposed here. However, since Spec, TP is occupied by an expletive, M-merger can proceed as expected.

Ultimately, these data show the utility of the M-merger operation – when it is intended to occur (here, by virtue of T_{ERG}), the operation will occur on whatever it finds in the specifier of the clitic-doubling functional head. While in most cases the element in the specifier is a Moved (KP+) DP, M-merger is impeded by a lack of DP, as it was suggested here to proceed on an expletive.

In conclusion, to complete the derivation of the whole transitive AUX, it must be assumed that an ABS doubled clitic is Merged, if possible, as shown in (27), and that the complex v head containing this clitic raises to through Asp to T, as discussed in Chapter 2. The resulting AUX structure is shown in (36).

(36)



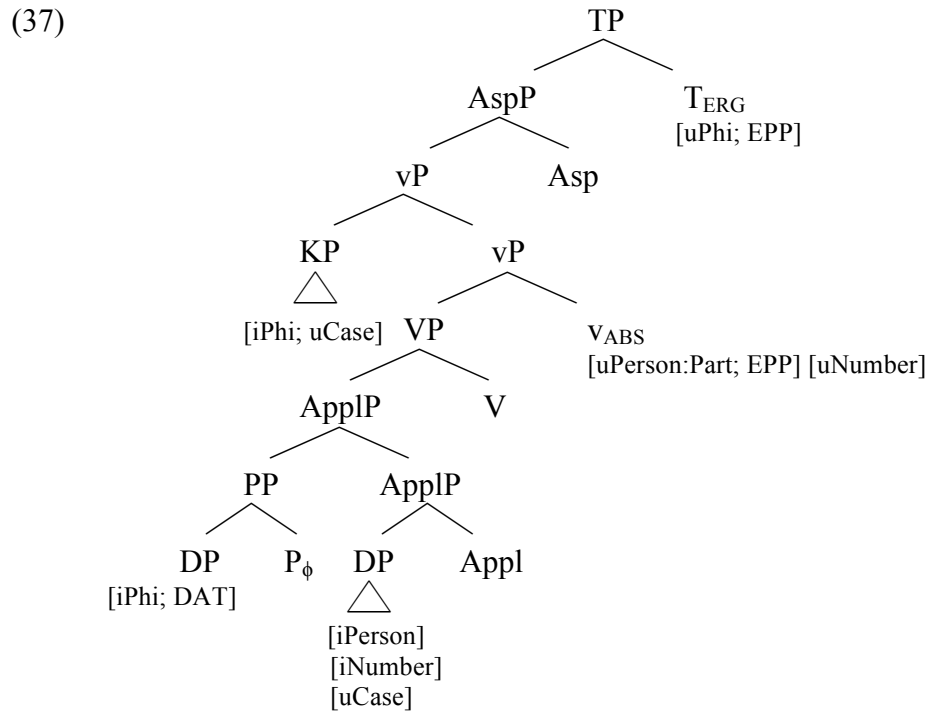
Notice that both *v* and *T* host doubled clitics, and both heads are Agree-Linked to the arguments that generated those clitics. At first glance, from the two arguments, it would be expected that the anchor of AUX would show two sets of agreement features. However, only ABS agreement is observed. This is due to the separation of Agree into Agree-Link and Agree-Copy. Whether or not agreement features are manifested is a post-syntactic decision; I claim (and will further explain in Chapter 5) that only ABS arguments are accessible for Agree-Copy; ERG arguments are not, and therefore ERG agreement features will never be observed on AUX.

This section has extended the M-merger analysis to ERG doubled clitics. As ERG Case is assigned by Agree + Move of the KP + DP to Spec, TP, it was suggested that the Move component of the M-merger does not necessarily require the argument remaining *in situ*, but a Copy of a Moved DP can be reduced from its new landing site to form a complex head with T_{ERG} . When Case assignment and doubled clitics do not seem to align, I suggested that the doubled clitic was the result of M-merger on an expletive. This required the assumption that expletives include Number features matching the *in situ* DP.

3.3 Ditransitive AUX: ERG & DAT doubled clitics

This section shows that the M-merger approach to clitic doubling extends to the derivation of the ditransitive AUX. Recall that this form of AUX includes clitics doubling of the DAT and ERG arguments; the anchor shows agreement in Number with the ABS argument. As an effect of the PCC, ABS doubled clitics do not arise in ditransitives, as only 3rd Person ABS arguments are available. This analysis supposes that DAT Case is not structurally assigned to indirect objects, and that agreement with the DAT DP is not represented on the anchor of AUX due to its inability to Agree-Copy (as introduced in Chapter 3, and explored more thoroughly in Chapter 5).

The following structure is proposed for ditransitive clauses.



The structure in (37) shows that in ditransitives, both indirect and direct object arguments are introduced via ApplP (cf. Arregi & Nevins, 2012). The indirect object receives DAT Case inherently due to its Merging in a PP in Spec, ApplP (Rezac, 2008a). P here is a Phi Probe and Agrees with the DAT DP, making the features of these arguments available for Agree-Link with v. Within the vP, both the direct and indirect objects need to Agree-Link with v. For the direct object argument, this relation will facilitate Case assignment and ensure Number agreement on the anchor of AUX; for the indirect object, this will ensure clitic doubling. However, this relationship must account for observed PCC effects.

Before turning the specifics of clitic doubling in ditransitives, a review of the PCC analysis presented in Chapter 3 is in order. Recall that the PCC in Basque prohibits a structurally lower ABS argument from appearing in the context of a DAT, if that ABS argument is 1st or 2nd Person. Thus, the structure for ditransitives needs to ensure that the direct object is a 3rd Person

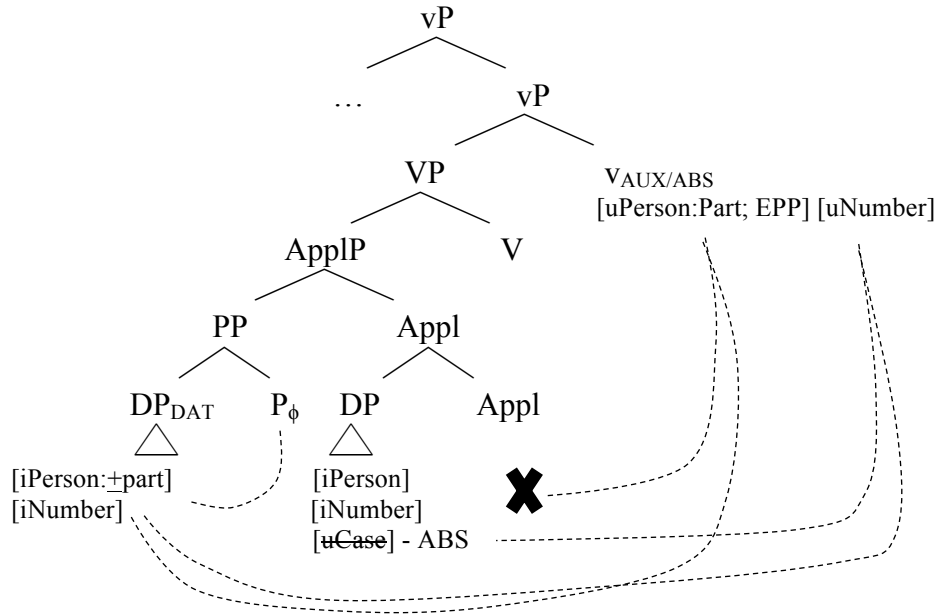
argument. This was accounted for by positing that the Person and Number Probes on *v* both Multiple Agree-Link with the Spec and complement arguments of ApplP (the direct and indirect object). Recall that Agree-Link with the relativized Person Probe results in clitic doubling; therefore, if both the ABS and DAT arguments were to Agree-Link with the Person Probe, two arguments would Copy and try to Move to Spec, *v*P to clitic double via M-merger. I claim that, beyond the Spec, *v*P position in which an external (ERG) argument can Merge, only one Spec position can be generated to receive a Copy of a Goal. This constitutes a restriction on the M-merger process, at least for Basque, which can be formalized as follows.

- (38) If a Probe *P* enters into multiple Agree relations with more than one Goal ($G_1, G_2, \dots G_n$), only the structurally highest *G* can occupy the Specifier position of *P* to undergo M-merger.

Thus, based on (38), a Copy of only the DAT can Copy-Move to Spec, *v*P; this transmission is facilitated by *P*. This limitation on M-merger is a new modification to account for Basque; extension of this clitic doubling analyses will help determine whether this is a property of the operation itself or a language-specific modification.

Thus, if Agree-Link does occur between a Probe that can initiate M-merger and multiple Goals, the derivation is assumed to crash based on the lack of landing site for the Copies of G_{2-n} . In Basque, this means the derivation cannot proceed with structurally lower 1st or 2nd Person ABS arguments. Consequently, only 3rd Person ABS arguments appear in ditransitives, meaning that only DAT and ERG doubled clitics are generated. ERG clitic doubling occurs as it does in transitives; the remainder of this section demonstrates how DAT doubled clitics arise, while still allowing ABS Case assignment to the direct object, and ABS Number agreement on the anchor of AUX.

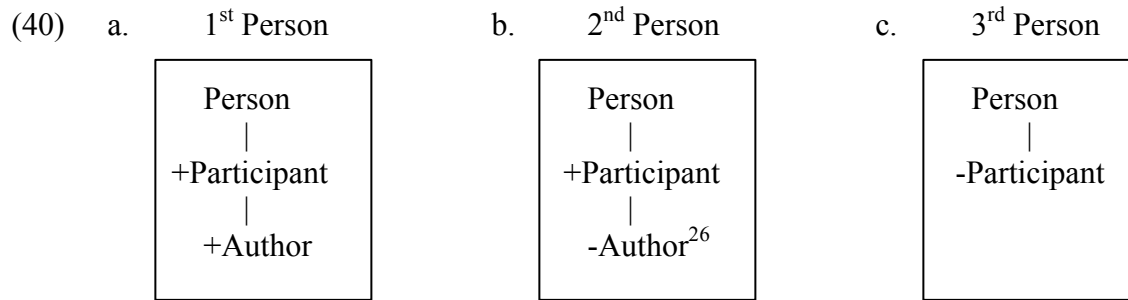
(39)



Recall that I posit that the Person and Number Probes on *v* search concurrently and Multiple Agree-Link with all eligible Goals in their domain. Looking first at the Number Probe, this Probe Multiple Agree-Links with both the direct object argument and the P_ϕ governing the DAT DP. Consequently, the direct object receives ABS Case structurally; agreement features on this Probe will ultimately be spelled out reflecting the ABS argument, as ABS is accessible for Agree-Copy but features of the DAT argument are not.

Turning to the Person Probe, in ditransitives like (39) it tries to Agree-Link with both the P in Spec, ApplP and with the DP complement of Appl. In the case of the latter, this Agree-Link relation must fail by virtue of the lack of [participant] feature of the ABS argument, or the derivation will crash. In the case of the former, Agree-Link arises regardless of the Person feature specifications of the argument. This is because DAT DPs are argued by contain either a [+participant] feature, for 1st/2nd Person arguments, or a [-participant] feature, for 3rd Person arguments. This correlates to speakers' preferences for animate DPs with DAT Case marking. Thus, the Person feature specification for these DPs differs from that given for ABS DPs in (29)

above. For DAT DPs (and consequently, for the Ps to which they transfer their features), the following Person feature specifications hold.



Thus, Agree-Link will arise between the P in Spec, ApplP and v, but not between the ABS direct object DP and v.

The proposal that a doubled clitic can be generated via Agree between a Probe P_ϕ and v is proposed by Rezac (2008a), but the details of such a proposal are not laid out. Accounting for this requires an extension of the approach suggested for ERG doubled clitics above. Recall that in straightforward cases of Agree between a Probe and a DP Goal (i.e., with ABS arguments), a copy of the DP was posited to Copy-Move to the specifier of the Probe. This copy reduces to a D and forms a complex head with the Probe, while the lower copy spells out as a full DP. With ERG arguments, it was posited that the entire KP Moves to Spec, TP for Case reasons, and the higher copy of the KP reduces to a K and forms a complex head with T, surfacing as a doubled clitic.

However, in the case of DAT Goals which Agree with P_ϕ Probes, it is not immediately clear whether the whole PP Copy-Moves to Spec, vP, or just the DAT DP despite not having a direct Agree-Link relation with v. To this end, I turn to the structure of non-Phi-Probe PPs in

²⁶ Alternatively the [-author] feature could be omitted from the 2nd Person feature bundle, given that Basque does not have an inclusive/exclusive distinction and this feature (though characterized as the absence of a privative Speaker feature) has been cited as the source of that distinction (McGinnis, 2005).

Basque. Laka (1996) claims that postpositions are agglutinative, and therefore must appear affixed on their DP complement, as shown in (41).

- (41) errepede-a-n
road-DEF-on
'on the road'

Movement of the postposition /n/ off of its DP complement yields an ungrammatical result, as seen in (42).

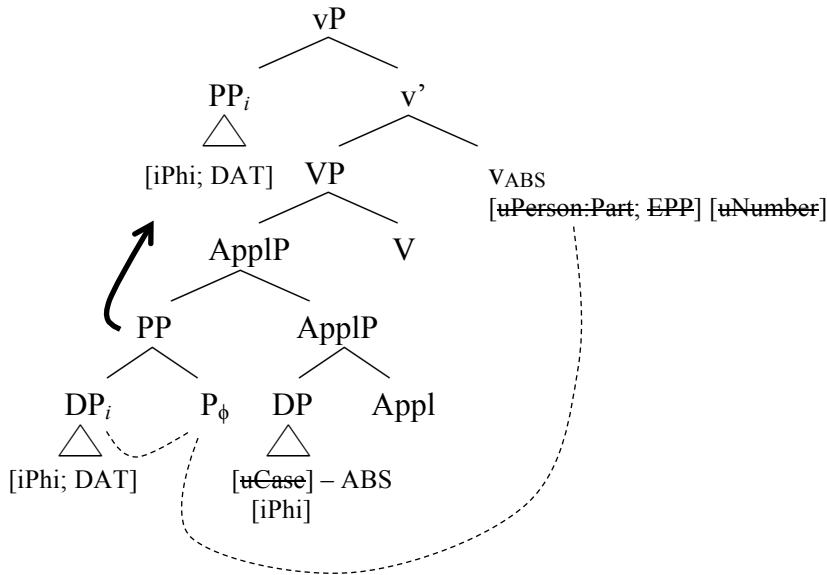
- (42) a. ibili errepede-a-n zen
walked road-DEF-on AUX.PAST
'walked on the road'
- b. *ibili errepede-a zen-n
walked road-DEF AUX.PAST-on

The example in (42b) shows that postposition stranding is not possible in Basque; this suggests that the DP complement/Goal of the P in Spec, ApplP cannot Move independent of the PP.

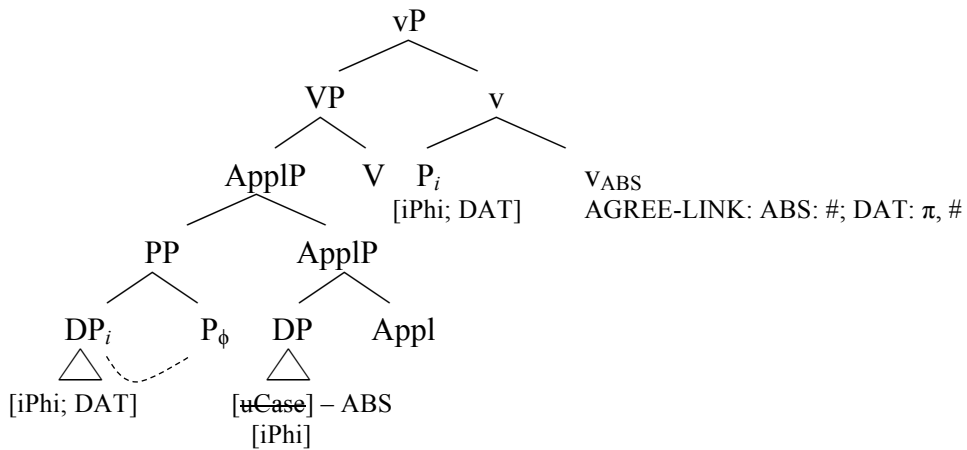
Therefore, the whole PP is posited to Move to Spec, vP. This can be treated as parallel to ERG clitic doubling – the projection hosting the DP argument Agree + Moves to the specifier of the functional head, and then reduces. Therefore, DAT doubled clitics on v have the category feature P; as with ERG doubled clitics, this will be accounted for post-syntactically.

Thus, DAT clitic doubling thus proceeds as shown in (43); Agree-Link relations that are not relevant for clitic doubling are omitted for clarity.

(43) a. **Agree + Move:** DAT indirect object to v

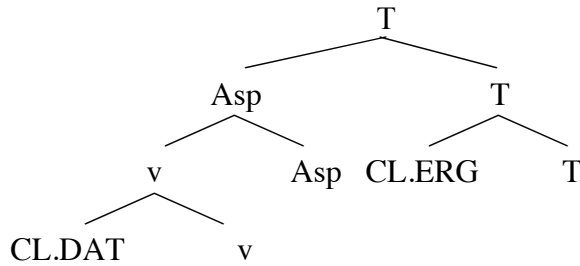


b. **M-merger:** DAT doubled clitics & v



To finalize the ditransitive AUX, ERG clitic doubling occurs via M-merger as shown in (33); the complex v that contains the DAT doubled clitic raises to T as discussed in Chapter 2. The structure in (44) shows the final ditransitive AUX.

(44) *Ditransitive AUX*



This section has shown that the M-merger approach to clitic doubling can be extended to ditransitives, while still maintaining PCC effects and respecting the agreement patterns observed on the anchor of AUX. Further, it was explained why DAT clitics of all Person values can be generated, while clitic doubling by *v* is limited to 1st/2nd Person arguments when it occurs with ABS arguments, an explanation which appeal to animacy preferences for DATs in ditransitives expressed by some speakers. Finally, the precise process by which an argument can Move for M-merger when Agree-Link is mediated by another Probe was discussed.

3.4 **Applicative Intransitives**

This section considers another construction in which DAT and ABS arguments co-occur: applicative intransitives. In many applicative intransitives, PCC effects are observed and non-3rd Person ABS arguments are prohibited. DAT, not ABS, doubled clitics surface, and the anchor of AUX shows agreement with the ABS argument in Number, as shown in (45).

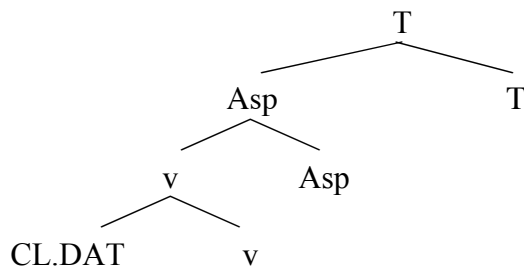
- (45) a. Haiek Itxaso-ri gustatzen za-izki-o
They.ABS Itxaso-DAT like L-have.PL-3S.DAT
'Itxaso likes them' (Lit: They are pleasing to Itxaso)
- b. *Ni Itxaso-ri gustatzen na-tzai-o
I.ABS Itxaso-DAT like 1S.ABS-have.1S-3S.DAT
'Itxaso likes me' (Lit: I am pleasing to Itxaso)

(Rezac, 2008b, p. 63:(#1a–b))

In (45a), a 3rd Person ABS argument co-occurs with a DAT indirect object; in (45b), the ABS argument is 1st Person, and the construction is ungrammatical. Such applicative intransitives can be analyzed identically to ditransitives, except that there is no external argument.

The structures in (39)-(43) are directly applicable to these constructions. The relativized Person Probe seeks a [participant] Goal, and tries to Multiple Agree-Link with both the DAT and ABS arguments. PCC effects are obtained by the inability of *v* to host multiple doubled clitics, per (38); the derivation crashes if the copy of a second argument tries to Move to Spec, *v*P. Thus, no 1st/2nd Person ABS arguments are observed in this applicative intransitive structure. Multiple Agree-Link occurs simultaneously between the Number and relativized Person Probe. ABS Case is assigned and ABS Number agreement for the anchor of AUX is obtained by Agree-Link with the Number Probe; DAT Number features are Agree-Linked but will not be eligible for Agree-Copy. The following structure is obtained for AUX in DAT-ABS applicative intransitives.

(46) *Applicative Intransitive AUX*



Recall, however, that there is another class of applicative intransitives in which PCC effects do not hold, and both ABS and DAT doubled clitics appear on AUX.

- (47) Ni Itxaso-ri etortzen n-atzai-o
 I.ABS Itxaso-DAT coming 1S.ABS-AUX-3S.DAT
 ‘I am coming to Itxaso’

(Rezac, 2008b, p. 63:(#1c))

The data in (47) are not readily compatible with the analysis proposed, given PCC effects observed so far. In trying to reconcile this analysis by following Rezac (2008) and appealing to the underlying structural position of the ABS argument relative to that of the DAT, structures are predicted in which ABS arguments are clitic-doubled, but DAT arguments are not (assuming that (38) continues to hold). Interestingly, this is the configuration that some younger speakers prefer, as shown in (48).

(48) a *Allowed, but highly formal*²⁷

Miren-i etorri n-atzai-o
 Miren-DAT come 1S.ABS-AUX-3S.DAT
 ‘I have come to Miren’

b. *Preferred, without DAT marking/clitic doubling*

Miren-engana etorri n-aiz
 Miren-to come 1s.abs-be.1s
 ‘I have come to Miren’

In (48), although some speakers allow clitic doubling of both the (pro-dropped) ABS subject and the DAT argument, the preference is for *Miren* to be marked by the postposition */engana/* ‘to’ and not be doubled by a clitic. Note that this preference holds despite the animacy of the argument *Miren*. This might suggest that some speakers have trouble accommodating multiple clitics generated by one Probe.

Ultimately, the solution rests in either determining another Probe in the structure that can Agree-Link the ABS and DAT arguments and host a second clitic. Perhaps it could be suggested that (38) could be modified such that the number of specifiers allowed were equal to the number of EPP features hosted on a Probing head; in such a case, it could be stipulated that the Number Probe also included an EPP feature, and another Spec, vP could be available to host the lower

²⁷ Note that one speaker rejected this construction altogether.

argument (DAT). However, this would be highly stipulative and would require some explanation for why the Number Probe does not contain an EPP feature in ditransitives or with a higher DAT argument.

The suggestion here does not account for the co-occurrence of ABS and DAT clitics in this small handful of applicative intransitives. However, the M-merger analysis has proven to account for the majority of the clitic doubling patterns observed in a syntactically motivated way; this approach relies on the Agree(-Link) relations already proposed to occur in the syntax for independent Case and licensing reasons. I believe that making further use of these relations to account for clitic doubling outweighs the inability of this analysis (at the moment) to account for ABS-DAT applicative intransitives. Future work on this issue will seek to find an M-merger-compatible analysis for data like (47) and (48a).

4 Conclusion

This chapter has fully explored the issue of clitic doubling in Basque. Section 1 examined the claim, assumed so far, that the ABS, ERG, and DAT morphemes on AUX were in fact doubled clitics and not agreement markers. It was also suggested that there is a paradigmatic gap in the ABS inventory, with a complete lack of 3rd Person clitics. Following Arregi & Nevins (2012), the morphemes appearing in AUX-initial position in 3rd Person ABS contexts were analyzed as L-morpheme, inserted post-syntactically.

Section 2 reviewed earlier approaches to clitic doubling, and a brief attempt was made to extend each of these approaches to Basque. A current analysis of clitic doubling, the Big DP approach of Arregi & Nevins (2012), was reviewed. Although this account takes into consideration the complicated distributional patterns of clitics, the motivation of the extended

functional projections put forth in the analysis was questionable. This motivated the search for an alternative analysis of clitic doubling.

Ultimately, an M-merger analysis of clitic doubling was pursued, following Harizanov (2014) for Bulgarian and Kramer (2014) for Amharic. The extension of this approach to Basque further demonstrates its cross-linguistic viability, as it is able to account for (at least) three unrelated languages. Section 3 discussed the implementation of the M-merger account to clitic doubling in detail, showing that it can account for intransitive, transitive, and ditransitive constructions. This analysis was also compatible with the approach to Case and agreement put forth in the previous chapter. Major points of discussion included the split of the Probe on *v* into separate Number and Person Probes, the relativization of the latter to seek Participant features, and the ability of this relativization to account for PCC effects based on the feature specification of ABS versus DAT 3rd Person arguments.

A few original modifications and refinements to the M-merger theory of clitic doubling were proposed to account for the Basque data. This included the claim that if a DP Moves to the specifier of its Probe as the complement of another projection (i.e., KP for ERG, PP for DAT), the M-merger operation occurs on the entire Moved structure and reduces it to clitic with the category feature of the highest head. Further evidence for the ability of the M-merger operation to occur on anything found in a targeted specifier was suggested based on data from expletives, which accounts for ABS Case/ERG doubled clitic splits in unaccusative INF + *behar* constructions. Finally, a restriction was placed on the number of doubled clitics that a single Probe could ultimately host: there is only one Specifier position available for clitic doubling, so if a Probe Agree-Links with multiple Goals then only the structurally highest argument can be clitic doubled. In Basque, an attempt to host multiple doubled clitics leads to a derivational crash.

This concludes the syntactic analysis of the Basque AUX. The next chapter turns to post-syntactic operations that derive the surface AUX form.

CHAPTER 5: Morphological Operations

The previous chapters have offered a syntactic analysis for the Basque auxiliary (AUX), determining how Case is assigned, Agree relations arise, and doubled clitics are generated (but not overgenerated). However, the derivation is not completed; terminal nodes are not in the order that they appear in AUX, morphological constraints need to be followed, and phonological material is needed. Within a Distributed Morphology approach, all of these operations, and more, are in the purview of the Morphological Structure (MS), and will be discussed in this chapter.

Recall from Chapter 1 that the Distributed Morphology (DM) framework is assumed. This entails certain universal operations (e.g., Linearization, Vocabulary Insertion) that occur in all morphological derivations, cross-linguistically, as well as language- or even dialect-specific procedures that are not universally observed. To derive AUX from the syntactic structure to its pronunciation, I adopt a modular approach to post-syntactic operations put forth by Arregi & Nevins (2012), which assigns morphological operations to one of an ordered set of modules.

Within the DM framework, there is a significant lack of discussion regarding what specifically motivates morphological operations, and how the architecture of this component of the grammar enacts them. Therefore, one of the contributions of this chapter is the proposal of a module-internal ‘scanning’ procedure, by which incoming structures are assessed for their faithfulness to certain constraints, and if found to be in violation, repair strategies are enacted. The benefit of this procedure is that it provides formalism for an entire post-syntactic derivation. From a language-internal perspective, this demonstrates how constraints and repairs are situated in relation to one another, with the output of one operation serving as the input for the next. From a cross-linguistic perspective, adopting this scanning procedure for multiple languages (or even multiple dialects of the same language) demonstrates how a single constraint can be handled by

multiple repair strategies, or how one repair operation can be used to satisfy different constraint. Ultimately, comparing the constraint + repair strategies, and the order in which they occur in multiple languages, is facilitated by adopting a common procedural framework, and encourages the discovery of both morphological universals and unique variants.

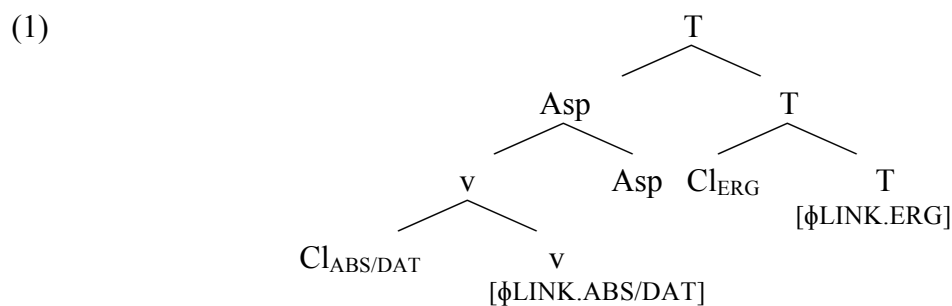
The structure of this chapter is as follows. Section 1 reviews AUX forms generated by the syntax and their surface forms, showing what the morphology needs to accomplish. Section 2 looks at DM operations up to Vocabulary Insertion; this section introduces Arregi & Nevins’ modular approach to MS as well as the operation-specific scanning procedure discussed above. Section 3 reviews Vocabulary Insertion; Section 4 concludes.

1 Review of AUX forms: what needs to be derived?

This section will discuss the implications of the AUX syntactic structures for the morphology. The discussion will proceed as follows: Section 1.1 reviews the overall syntactic structure, and Section 1.2 explores the composition of the “anchor” of AUX. Section 1.3 presents the surface forms of AUX.

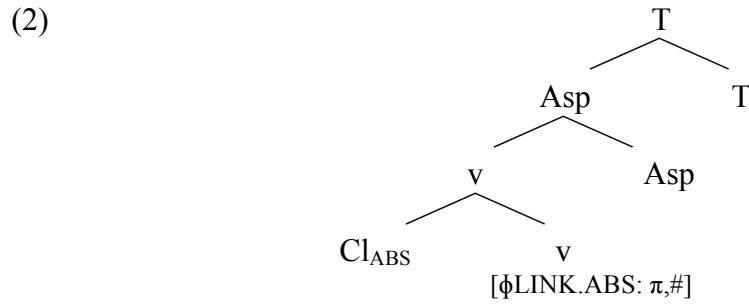
1.1 Overall structure of AUX

Assuming M-merger and v-to-T raising, the following basic structure was derived for AUX.

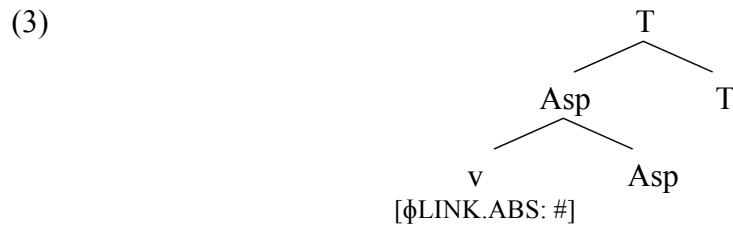


The template in (1) shows a doubled clitic for either an absolutive (ABS) or dative (DAT) argument as the sister of v, and an ergative (ERG) doubled clitic as the sister of T. The v and T heads are marked for the arguments with which they Agree-Linked in the syntax. This AUX

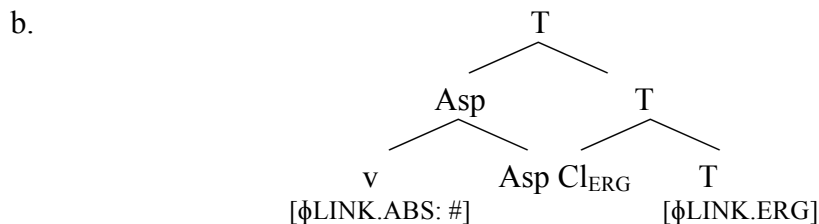
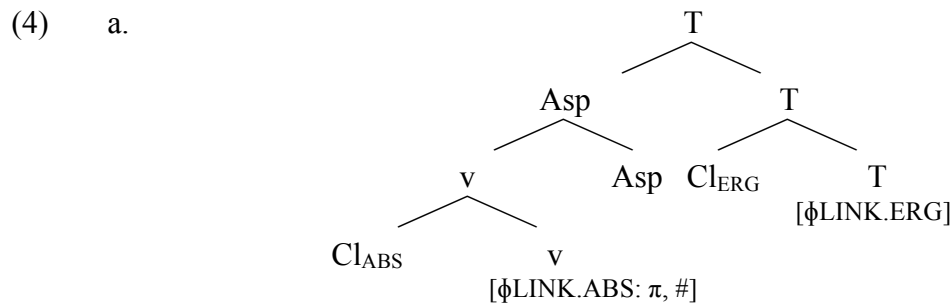
structure includes the Asp head picked up by v as it head-moved to T. Based on this template, different structures are yielded depending on what doubled clitics are present in AUX. For example, an intransitive AUX with a 1st or 2nd Person ABS argument results in the structure in (2).



If the ABS argument is in the 3rd Person, no doubled clitic is generated yielding the structure in (3).

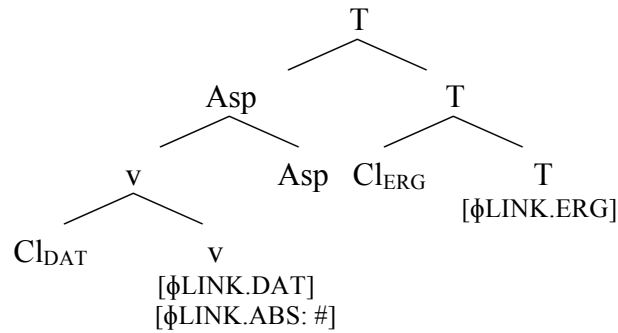


In transitive structures, an ERG doubled clitic appears with a 1st/2nd Person ABS clitic (as in (4a)) or alone, if the ABS argument is 3rd Person (as in (4b)).



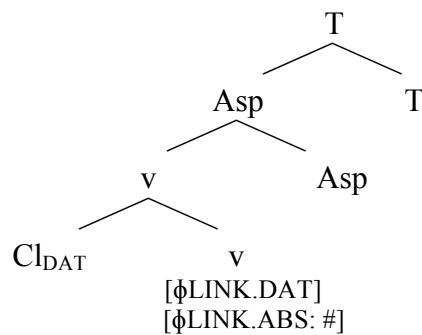
Finally, ditransitive AUX consists of the structure in (5), regardless of the Person feature of the DAT argument.

(5)

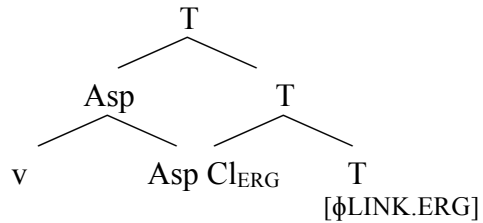


The previous chapters also considered several less commonly occurring AUX forms: two types of applicative intransitives (DAT-ABS/ABS-DAT), and unergatives with no underlying argument. Although the derivations in this chapter will focus on intransitives, transitives, and ditransitives, the operations proposed also need to be amenable to these constructions as much as possible; AUX structures for DAT-ABS applicative intransitives and for true unergatives are given below.

(6) a *DAT-ABS Applicative Intransitive*



- b. *True unergative (no underlying ABS)*



There is a close, but not perfect, correspondence between these structures and the surface order of the AUX morphemes, shown in (7).

- (7) a. *Intransitive (with ABS clitic, as in (2))*

Cl_{ABS} – v – Asp – T
Basque example: z-ar-ø-a

- b. *Intransitive (without ABS clitic, as in (3))*

L – v – Asp – T
Basque example: d-ir-ø-a

- c. *Transitive (with ABS clitic, as in (4a))*

Cl_{ABS} – v – Asp – T – Cl_{ERG}
Basque example: n-a-ø-u-zu

- d. *Transitive (without ABS clitic, as in (4b))*

L – v – Asp – T – Cl_{ERG}
Basque example: d-it-ø-u-zu

- e. *Ditransitive (as in (5))*

L – v – Asp – T – Cl_{DAT} – Cl_{ERG}
Basque example: d-izk-i-gu-zu

- f. *DAT-ABS applicative intransitive (as in (6a))*

L – v – Asp – T – Cl_{DAT}
Basque example: z(a)-izk-ø-i-o

- g. *True unergative (as in (6b))*

L – v – Asp – T – Cl_{ERG}
Basque example: d-ø-ø-u-ø

Instances in which the syntactic structure does not place the clitic in its surface position are accounted for via post-syntactic operations, discussed in Section 2.4 below. Recall the morpheme indicated by “L” is inserted post-syntactically to satisfy morphological requirements of AUX. Note that in all cases, the exponence of the Aspect head (Asp) is null / \emptyset /.

1.2 The “anchor” of AUX: v + (Asp) + T

Within the syntax proper, v and T are two separate heads; both are Probes that initiate clitic doubling of their Goals. Between vP and TP is AspP, the head of which is included in the syntactic AUX by means of head movement of v up to T. I refer to these nodes together as the “anchor” of AUX, as a theoretically neutral way drawing a distinction between the doubled clitics in AUX and the functional heads that carry the features (Tense, aspect, agreement) commonly associated with auxiliary verbs. I assume that v, with a doubled clitic if applicable, raises to Asp, and then raises to T in the syntax and forms the complex T head that is ultimately realized as the AUX M-word. Although v and T are both overtly realized morphologically (in most cases), Asp is always null. Two questions arise: first, what is the fate of the Asp head within the AUX M-word? Second, do these heads remain separate post-syntactically, or if they are conflated via Fusion, a DM operation that combines morphemes into one terminal node.

First, consider the Asp head within the anchor of AUX. In the analysis put forth in Chapter 2, this morpheme was analyzed as a Probe that Agrees with a vP-internal Goal, v_{Asp} . This relation transmits features that are required to originate between TP and vP for purposes of semantic interpretation; these features are morphologically realized on V via v_{Asp} . This is shown in (8).

- (8) emakume-a ogi-a jaten ari d-a
 woman-the bread-the eating PROG L-be.3S
 ‘The woman is eating the bread’

(Laka, 2006a, p. 173:(#1b))

In constructions like (8), the morpheme *ari* is the realization of the head v_{Asp} . The controlling head, Asp, is realized as null.¹ As the head is never overtly realized, it is difficult to determine precisely what becomes of this terminal node post-syntactically. Ultimately, I will suggest that Asp and v form a single terminal node post-syntactically via Fusion, but this analysis is highly stipulative. This is discussed in Section 2.1.3.

Considering the post-syntactic relation between the anchor terminal nodes, there are two reasons to suspect that Fusion might occur between $v(+\text{Asp})$ and T. First, the surface forms of v and T are ultimately sensitive to one another, which could be accounted for more easily if the features of both morphemes required only one Vocabulary Item². Second, the surface position of doubled clitics, specifically the DAT and plural clitics, show that a good deal of movement must occur, which can be handled more economically if v and T were not separate.³

¹ Recall that Laka (2006a) presents evidence that *ari* is, in some constructions, the Asp head itself. The analysis here is limited to accounting for AUX patterns in the standard dialect, Batua. The analysis here would face some challenges accounting for these data. In my fieldwork I was unable to find speakers of the dialect that Laka discusses; therefore, efforts to work towards a unifying analysis were stymied.

² There is a reciprocal sensitivity to features of v and T. Consider the effects of Tense, as shown below in the 1st Person singular intransitive AUX: *n-aiz* [present] vs. *n-intzen* [past]. The form of the doubled clitic does not change, but the rest of the AUX does, indicating that the form of the anchor is sensitive to Tense.

There is a difference, too, in the form of the anchor when Tense is held consistent; this can be seen by comparing the intransitive, 1st Person singular *n-aiz* with the transitive AUX *n-au-ø*, in which the ABS argument is also 1st Person singular. Although the form of the 1st Person singular ABS clitic remains consistent, the anchor of AUX changes form, indicating sensitivity to the features of v in addition to those of Tense. To keep v and T separate and still reflect this sensitivity, the VIs for v and T would have to reference the featural specifications of one another.

³ A cursory look at the movement that the DAT doubled clitic must undergo initially suggests that v and T may undergo Fusion and becoming one terminal node. Recall from (5) above the

However, in this section I argue that *v* and *T* are best analyzed as separate terminal nodes throughout the post-syntactic derivation. There are several other factors suggesting this analysis. First, the brief claim above that there is reciprocal featural sensitivity between *v* and *T* fails to account for a striking paradigmatic consistency. For a concrete example, consider the present tense intransitive paradigm, repeated as Table 1 here.

Table 1. Intransitive present tense AUX

	SINGULAR	PLURAL
1 ST PERSON	n-a-iz	g-ar-a
2 ND PERSON	z-ar-a	z-ar-a-te
3 RD PERSON	d-ø-a	d-ir-a

This table shows an alternative morpheme division, in which *v* and *T* are realized as unique Vocabulary Items. Note that in every case, the morpheme /a/ appears. This can be analyzed as *T*, as the value of Tense is consistent throughout and *T* is not influenced by Phi features.

Meanwhile, Phi feature-sensitive *v* morphemes can be identified as well: /iz/ for 1st Person singular, /ar/ for 1st Person plural and 2nd person⁴, /ø/ for 3rd Person singular, and /ir/ for 3rd Person plural.

Second, consider the position of the ERG doubled clitic. In the syntax, this doubled clitic is between *v* and *T* as in (4) and (5), but surfaces to the right of the anchor as seen in (7).

DAT doubled clitics in the syntax are to the left of the anchor of AUX, but surface to the direct right of the anchor as in (6e); this is to say, in the default case, the head-final nature of Basque suggests that clitics will prefix to the functional heads with which they appear post M-merger. In order for the DAT doubled clitic to reach a surface position to the right of the anchor, it has to move twice – in one step past *v*, and in another step past *T*. The motivation for the first movement can be easily explained (by Local Dislocation), but the second movement past *T* requires the postulation of some language-specific prohibition on the DAT between *v* and *T*, and then the implementation of an operation that affects this movement. It would be far simpler to assume that the *v* and *T* morphemes become one terminal node, leaving but one movement for the DAT doubled clitic.

⁴ For the present discussion, I am leaving the 2nd Person plural marker /te/ aside; this is discussed in Section 2.1 below.

However, within the DM framework discussed below, operations are ordered with respect to Linearization (the point during/after which morpheme movement can occur). The operation conflating morphemes, Fusion, occurs before Linearization; due to the obstacle created by the ERG doubled clitic, *v* and *T* cannot undergo Fusion and therefore do not become one morpheme.

Finally, there is overt morphological evidence that *v* and *T* do not combine. Consider the 2nd Person past tense intransitive AUX /z-ine-te-n/. Assuming that *v* and *T* are isolated morphemes, *v* is realized as /ine/ and *T* as /(e)n/; note that the morpheme /te/, the 2nd Person plural marker appears between /ine/ and /(e)n/. Even though /te/ seldom occurs in this position, it is concrete evidence that *v* and *T* cannot be conflated into one morpheme.

Therefore, I argue that despite the analytical complexities required to account for the reciprocal sensitivity of *v* and *T*, and clitic movement, there is abundant morphological evidence against the conflation of *v* and *T*. This includes consistency of forms within paradigms; the movement of the ERG doubled clitic on the assumption that post-syntactic operations are ordered; the non-sisterhood of *v* and *T*; and the occasional appearance of a morpheme between *v* and *T*. Going forward, the anchor of AUX will refer to *v*(+Asp) and *T*, recognizing that these terminal nodes remain separate throughout the derivation.

1.3 Surface forms of AUX

This section will briefly review the surface forms of intransitive, transitive, and ditransitive AUX to be derived in the remainder of this section. The purpose is to isolate the morphemes of the AUX forms as they will be analyzed, and to informally summarize the changes that need to be made to get from the syntactic structures in (2) through (5) to the surface forms. A detailed DM analysis of the motivation for and procedure behind these changes will be presented in Section 2 below.

Before proceeding, recall that Chapter 2 explained that valency is not a reliable indication of which AUX will appear in a given context. For example, the AUX commonly used in transitives appears with true unergatives, which are one-place predicates and therefore technically intransitive. This section retains the shorthand used so far, where ‘intransitive’, ‘transitive’, and ‘ditransitive’ AUX refer to the constructions in which the AUX form most commonly appears, for ease of discussion. Later, this chapter will demonstrate that it is the clitics on AUX that determines the form of v (and therefore T) (Arregi & Nevins, 2012).

1.3.1 Intransitive AUX

The full intransitive AUX paradigm is shown in Table 1 above. AUX forms consist of an ABS doubled clitic (except when ABS is 3rd Person), seen in Table 2, a v morpheme, seen in Table 3, a null Asp morpheme, and a T morpheme, shown in (9).

Table 2. ABS doubled clitics

	SINGULAR	PLURAL
1 ST PERSON	n-	g-
2 ND PERSON	z-	z-...-te

Table 3. Forms of v – intransitives

	SINGULAR	PLURAL
1 ST PERSON	-iz	-ar-
2 ND PERSON	-ar-	-ar-
3 RD PERSON	-∅-	-ir-

(9) T_{intransitive} ↔ /a/

The following needs to be done in intransitives to achieve the surface form. If the ABS argument is 1st Person singular, v and T reverse orders from what is generated in the syntax. If the ABS argument is 2nd Person plural, the plural marker /te/ must be produced and moved to the right of T. If the ABS argument is 3rd Person no doubled clitic is generated and /d/ is inserted. In all cases, the ABS argument features must Agree-Copy onto AUX: both Person and Number if

1st/2nd Person, Number only if 3rd Person. I also suggest that v and Asp undergo Fusion in all cases.

1.3.2 Transitive AUX

The structures in (4) above show the syntactic output for transitive AUX. The surface forms are shown in Table 4 below.

Table 4. Transitive AUX

ERGATIVE (Subject)	ABSOLUTIVE (Direct Object)					
	1.SG	2.SG	3.SG	1.PL	2.PL	3.PL
1.SG		z-ait-u-t	d-ø-u-t		z-ait-uz-te-t	d-it-u-t
2.SG	n-a-u-zu		d-ø-u-zu	g-ait-u-zu		d-it-u-zu
3.SG	n-a-u-ø	z-ait-u-ø	d-ø-u-ø	g-ait-u-ø	z-ait-uz-te-ø	d-it-u-ø
1.PL		z-ait-u-gu	d-ø-u-gu		z-ait-uz-te-gu	d-it-u-gu
2.PL	n-a-u-zue		d-ø-u-zue	g-ait-u-zue		d-it-u-zue
3.PL	n-a-u-te	z-ait-uz-te	d-ø-u-te	g-ait-uz-te	z-ait-uz-te-te	d-it-uz-te

Transitive AUX contains an ABS doubled clitic (identical to Table 2 above), a v morpheme that reflects the Phi features of the ABS argument (shown in Table 5), a null Asp morpheme, a T morpheme, shown in (10), and an ERG doubled clitic (shown in Table 6).

Table 5. Forms of v - transitive

	SINGULAR	PLURAL
1 ST PERSON	-a-	-ait-
2 ND PERSON	-ait-	-ait-
3 RD PERSON	-ø-	-it-

(10) $T_{\text{transitive}} \leftrightarrow /u(z)/$

Table 6. ERG doubled clitics

	SINGULAR	PLURAL
1 ST PERSON	-t	-gu
2 ND PERSON	-zu	-zue
3 RD PERSON	-ø	-te

In order to achieve the morpheme order seen in Table 4, a few operations must occur. Primarily, in every derivation, the ERG clitic must move from the left to the right of T. As in intransitives,

in the case of 2nd or 3rd Person plural doubled clitics, the plural marker /(t)e/ must be produced and moved to the proper position to the left of T (though this could potentially happen twice in transitives, occurring for both a plural subject and object). Also as in intransitives, the morpheme /d/ must be inserted in lieu of a clitic when the ABS argument is 3rd Person. Regarding agreement on the anchor of AUX, the features of the ABS argument – but not the ERG argument – need to Agree-Copy. Agreement patterns are the same as in intransitives: Person and Number with 1st/2nd Person ABS arguments, Number only with 3rd Person. Finally, I suggest that v and Asp undergo Fusion.

1.3.3. Ditransitive AUX

The structure in (5) shows the syntactic output for ditransitive AUX. The surface forms are shown in Table 7 below.

Table 7. Ditransitive AUX (ABS = singular)

<i>ABSOLUTE (Direct Object) = 3.SG</i>							
ERGATIVE (Subject)	DATIVE (Indirect Object)						
	1.SG	2.SG	3.SG	1.PL	2.PL	3.PL	
1.SG		d-ø-i-zu-t	d-ø-i-o-t		d-ø-i-zue-t	d-ø-i-e-t	
2.SG	d-ø-i-da-zu		d-ø-i-o-zu	d-ø-i-gu-zu		d-ø-i-e-zu	
3.SG	d-ø-i-t-ø	d-ø-i-zu-ø	d-ø-i-o-ø	d-ø-i-gu-ø	d-ø-i-zue-ø	d-ø-i-e-ø	
1.PL		d-ø-i-zu-gu	d-ø-i-o-gu		d-ø-i-zue-gu	d-ø-i-e-gu	
2.PL	d-ø-i-da-zue		d-ø-i-o-zue	d-ø-i-gu-zue		d-ø-i-e-zue	
3.PL	d-ø-i-da-te	d-ø-i-zu-te	d-ø-i-o-te	d-ø-i-gu-te	d-ø-i-zue-te	d-ø-i-e-te	

The ditransitive AUX does not contain any ABS doubled clitics. Although v Agree-Links with both the DAT and ABS arguments (the latter in Number only), it is on the ABS argument's features that Agree-Copy on to the anchor of AUX. This is followed by a null Asp, which is followed T (in (12)). After T is a DAT doubled clitic (seen in Table 8), and AUX ends with an ERG doubled clitic (of the same form as in Table 6 above).

(11) a. v [singular] \leftrightarrow /ø/

- b. v [plural] \leftrightarrow /izk-/
 (12) T_{ditransitive} \leftrightarrow /i/

Table 8. DAT doubled clitics

	SINGULAR	PLURAL
1 ST PERSON	-da-/-t-	-gu-
2 ND PERSON	-zu-	-zue-
3 RD PERSON	-o-	-ø-e-

A number of operations must occur to achieve the surface order found in Table 8. The DAT doubled clitic must move to the right of T; the ERG doubled clitic must move to the right of the DAT clitic suffixed to T. In cases of 2nd and 3rd Person doubled clitics, the plural marker /(t)e/ appears as its own morpheme, distinct from the clitic realizing Person features (Arregi & Nevins, 2012). The morpheme v must show agreement features of the ABS argument, but not with the DAT with which it also Agrees in the syntax. The morpheme /d/ must be inserted to the left of v. Finally, I suggest that v and Asp undergo Fusion.

Section 1 has presented the syntactic structures for intransitive, transitive, and ditransitive AUX in Basque, and has shown paradigms for the surface forms of each AUX. Morphemes were identified and isolated, including doubled clitics, plural markers, and the functional heads making up the anchor of AUX. It was argued that these morphemes, v and T, are best analyzed as separate heads throughout the derivation, though I stipulate that v and Asp will form one morpheme via Fusion. Table 9 informally summarizes the changes that must be made to obtain the observed surface order.

Table 9. Summary of possible post-syntactic operations by AUX type⁵

INTRANSITIVES	TRANSITIVES	DITRANSITIVES
		Movement of DAT clitic to right of T
	Movement of ERG clitic to right of T	Movement of ERG clitic to right of T
Plural clitic movement to right of T	Plural clitic movement to right of T (possibly twice)	Plural clitic movement to right of T (possibly twice)
Insertion of L-morpheme	Insertion of L-morpheme	Insertion of L-morpheme
Fusion of v and Asp	Fusion of v and Asp	Fusion of v and Asp

Having established what needs to be achieved in the morphology, the following section turns to the DM framework to derive these surface forms.

2 Deriving AUX

This section presents the post-syntactic operations that AUX undergoes before Vocabulary Insertion. The process begins with the hierarchical structure shipped off from the syntax, and involves linearizing this structure and reordering morphemes. Central to the analysis put forth in this section is that of Arregi & Nevins (2008, 2012). A major contribution of this extremely thorough morphosyntactic analysis of the Basque AUX is their demonstration that post-syntactic derivational operations are ordered with respect to Spellout, Linearization, and Vocabulary Insertion. They demonstrate this using the Biscayan dialects of Lekeitio, Ondarru, and Zamudio, and work toward the establishment of modules that act sequentially on the structure sent from the syntax. The present analysis builds takes these modules as a starting point, with adjustments made to account for the dialectal differences of Batua. Ultimately, this analysis relies very heavily on that of Arregi & Nevins. The contribution of this chapter lies in the proposal for the scanning mechanism that aims to offer a standardized procedure for DM operations, which is currently missing from the theory. Figure 1 shows the modules Arregi &

⁵ Note that not all of these changes are made in every AUX, and the occurrence of one may preclude the occurrence of another.

Nevins propose, with operations modified for Batua.

Figure 1. Modular ordering of post-syntactic operations (cf. Arregi & Nevins, 2012)

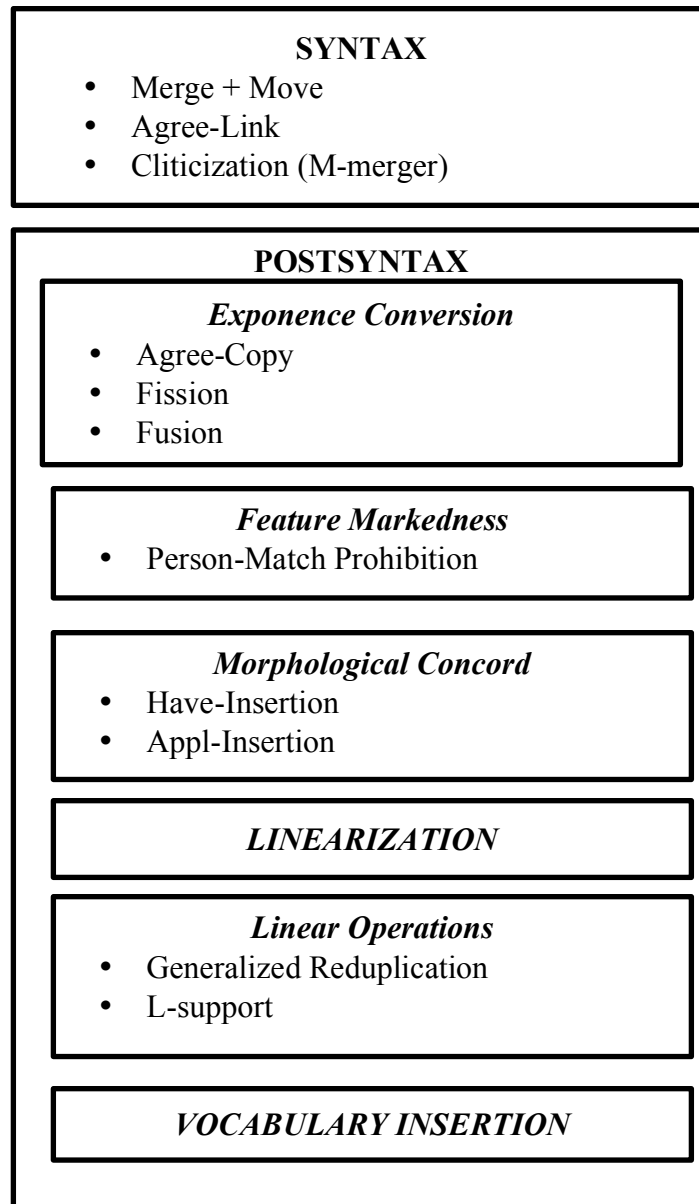
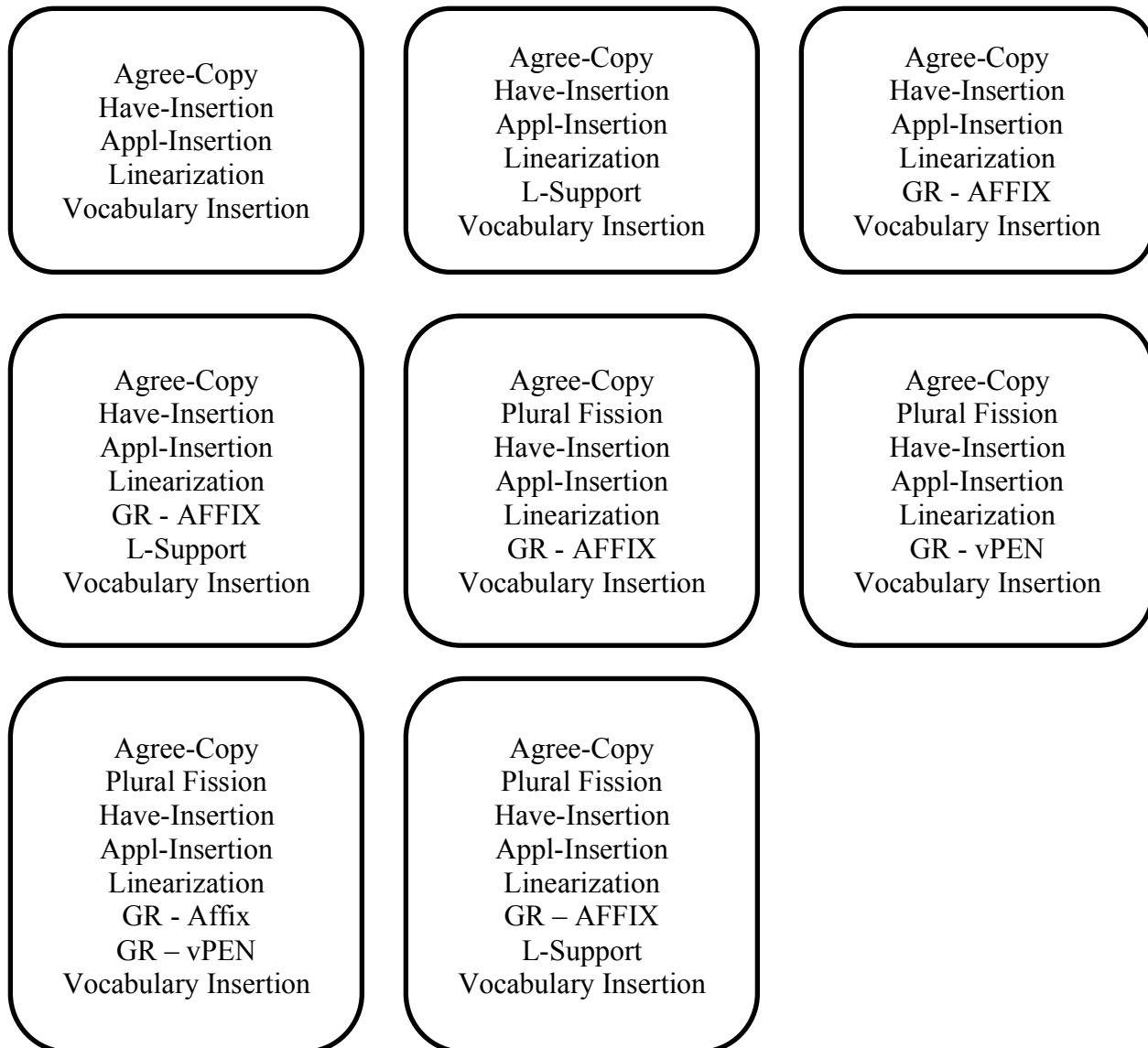


Figure 1 shows a full list of the modules Arregi & Nevins propose, and the operations that occur therein, modified for Batua. Previous chapters showed that the operations attributed to the syntactic component do remain in that module, despite the modifications proposed to their analysis (i.e., the inclusion of *v* in AUX, the M-merger approach to clitic doubling). From

Spellout to Vocabulary Insertion, a mere eight derivational patterns can account for the 90 present tense AUX forms.⁶ These patterns are shown in Figure 2.

Figure 2. AUX Derivational Patterns



Notice in Figure 2 that several operations are common to all of the derivational patterns: Agree-Copy, Have-Insertion, Appl-Insertion, Linearization, and Vocabulary Insertion. The inclusion of

⁶ In total, given possible combinations of Phi features, there are 114 possible AUX forms, (6 = intransitive, 36 = transitive, 72 = ditransitive), which can be accounted for by 10 derivational patterns. However, AUX forms in which the values of [participant] and [author] features match are not attested; this rules out 24 possible AUX forms (leaving 90) and eliminates two derivational patterns (leaving 8). See Section 2.2 for more discussion of unattested AUX forms.

the latter two are no surprise, given their fundamental role in all DM derivations. The other three operations serve to condition the *v* morpheme to reflect the surrounding clitics and agreement features of the ABS argument, as briefly mentioned in Section 1.2 above.

The remainder of this section works through the modules prior to Vocabulary Insertion in turn. With Arregi & Nevins' analysis taken as a starting point, the discussion here builds on it by illustrating the application of each operation and modifying it as needed to account for the Batua data. Further, I argue for a formalization of operations within these modules. Within the DM canon, the tendency is to introduce operations in statement form, motivated by another statement of language-specific evidence. I advocate for a more uniform way of introducing rules and their motivating constraint, coupled with a 'scanning' procedure that examines incoming structures for any violations and repairs them in language-specific (or even dialect-specific) ways. The benefit of this innovation is that it brings uniformity to DM operations, offering a procedural framework in which constraints, rules, and repairs can reside. This operational procedure works well with the modular architecture that Arregi & Nevins put forth for the post-syntactic component of the grammar.

2.1 Exponence Conversion

The Exponence Conversion module is described as "generally responsible for the initial steps of syntax-morphology mapping: following up Agree by actually going and copying the Goal to Probe, and setting up the morphological positions in which the features are realized" (Arregi & Nevins, 2012, p. 5). In the derivation of the Basque AUX, shows three operations in this module: Agree-Copy, Fission, and Fusion. Agree-Copy has been alluded to in the Chapters 3 and 4 as the operation that ensure that ABS features – and only ABS features – appear on the

anchor of AUX, despite Agree-Link relations holding with ERG and DAT arguments as well. The operation Fission occurs to generate the plural marker /(t)e/.

2.1.1 Agree-Copy

The clitic doubling/agreement puzzle discussed in Chapters 3 and 4 noted that despite the Agree relations necessary to perpetuate clitic-doubling via M-merger, only ABS features are reflected on the anchor of AUX. This observation encouraged the splitting of the Agree relation into two parts; Agree-Link, the syntactic operation occurring between Probe and Goal(s), and Agree-Copy. Agree-Copy is posited to be the second part of the Agree relation, occurring immediately post-syntactically.

Arregi & Nevins (2012) account for the Agree-Copy of ABS Phi features stipulating the following condition for Basque.

- (13) Condition on Agree-Copy in Basque
Only feature values from an absolutive Goal can be copied to a Probe.
(Arregi & Nevins, 2012, p. 83)

While this statement does capture the facts, I propose a more theoretically grounded motivation. As was discussed in Chapter 3, I suggested pursuing the approach to post-syntactic agreement put forth by Bobaljik (2008); in his analysis, agreement is a morphological phenomenon determined by the morphological (m-) case assigned to various arguments. Following Marantz (1991, 2000), Bobaljik proposed that m-case is assigned independently of syntactic Case (although the labels may align), and that m-cases form a hierarchy for agreement.

- (14) Unmarked case > Dependent case > Lexical/oblique case
(Bobaljik, 2008, p. 303:(#13))

Arguments are available for post-syntactic agreement based on their accessibility on this hierarchy. For example, if a lexical case is accessible for agreement, so too will be an argument

with dependent case, and one with unmarked case. Bobaljik illustrates this hierarchy specifically for NOM-ACC and ERG-ABS systems.

(15) ABS case > ERG case > DAT case

(Bobaljik, 2008, p. 306:(#19a))

To extend this analysis to Basque, m-case assignment in the language must be determined.

Marantz (1991, 2000) argues that case morphemes (e.g., in Basque, the markers *-k* (ERG), *-ri* (DAT), *-ø* (ABS)) as assigned based on the structural configuration in which Ns appear:

(16) CASE features are assigned/realized based on what governs the chain of the NP headed by N+Case.

(Marantz, 2000, p. 23:(#27))

However, Marantz shows that a (moved) N in a given position may be eligible for more than one m-case, if the chain is governed by several distinct XPs. Therefore, the hierarchy in (14) is invoked. Essentially, if the structural conditions for the assignment of the most marked case on the hierarchy are available, that case is assigned; once this case has been assigned, it is no longer available.

On the analysis proposed here for Basque, the assignment of m-case aligns directly with the Case (structural or nonstructural) that licenses the DP in the syntax. The following m-case assignments are observed.

(17) *M-case assignment*

- a. DAT M-CASE: structural condition = assigned to DP originally Merged in Spec, ApplP (i.e., governed by ApplP)
- b. ERG M-CASE: structural condition = assigned to DP Merged or Moved into a KP in Spec, vP (i.e., governed by vP)
- c. ABS M-CASE: structural condition = assigned elsewhere

Following (17), DAT m-case is assigned first when available, followed by ERG m-case.

Arguments not receiving these m-cases receive ABS m-case.

Bringing m-case assignment back around to post-syntactic agreement, the claim is that the structurally highest argument controls agreement; however, Bobaljik notes that there are limitations on which arguments *can* control agreement. The hierarchy in (14) is a hierarchy of accessibility, and languages establish specific cut-off points below which agreement cannot occur. For Basque, only unmarked (ABS) Case is accessible for agreement; this means that ERG and DAT arguments cannot be considered for Agree-Copy.

In sum, the claim here is that only arguments with ABS m-case can undergo Agree-Copy. Basque is well-behaved in that syntactic Case assignment correlates directly with the m-case that arguments receive. Agree-Copy is limited in that it cannot ‘see’ arguments with m-case lower than ABS on the hierarchy, which rules out Agree-Copy with ERG arguments in unergatives. This analysis has an advantage over the stipulation by which Arregi & Nevins (2012) ensure ABS Agree-Copy, in that it finds deeper theoretical underpinnings and brings Basque post-syntactic agreement in line with other cross-linguistically attested patterns. The remainder of this section focuses on formalizing the Agree-Copy process.

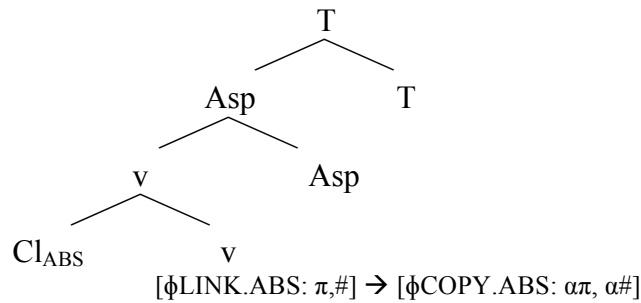
Given this innovation, the definition for Agree-Copy can be formalized as follows.

- (18) *Agree-Copy*⁷
- a. The structural description of an Agree-Copy rule has two terms: functional head H, and argument A.
 - b. The structural change Copies the Phi features of argument A onto head H **iff**:
 - i. An Agree-Link relation holds between H and A in the syntax
 - ii. A receives ABS m-case
 - iii. If Agree-Copy does not obtain, H receives default features

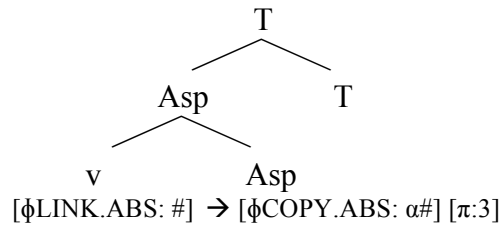
⁷ This rule formatting is attributed to Arregi & Nevins (2012). In the spirit of uniformity, I will follow this format for all morphological operations.

The consequences of Agree-Copy as explained in (18) are as follows. In intransitives, the functional heads considered are v and T. v Agree-Links with the internal argument, which has received ABS m-case. Thus, the features of this argument are Agree-Copied; in 3rd Person ABS contexts, the argument Agree-Links with the Number Probe only, and so only Number features are Agree-Copied. This is shown in (19).⁸

(19) a. *Intransitive: 1st/2nd Person ABS*



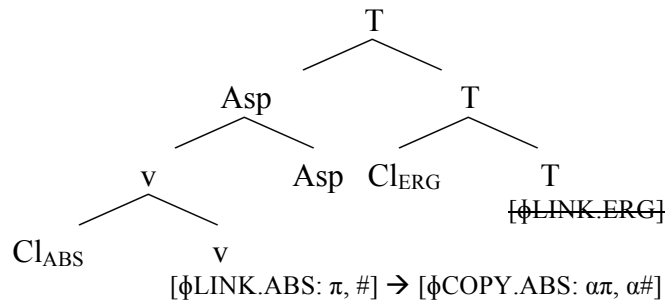
b. *Intransitive: 3rd Person ABS*



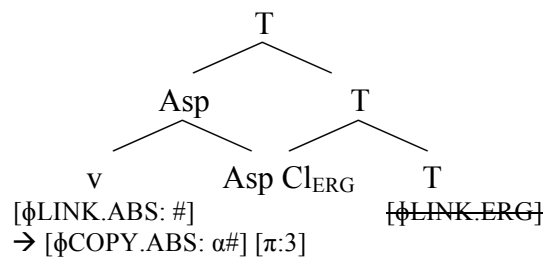
In transitives, the functional heads assessed are again v and T. Here, v Agree-Links (at least in Number) with the ABS argument, and T Agree-Links with the ERG argument. However, only the ABS is eligible for Agree-Copy; T receives default (null) features. This is shown in (20).

⁸ The notation α here is used to reference the feature values of the source argument.

(20) a. *Transitive: 1st/2nd Person ABS*

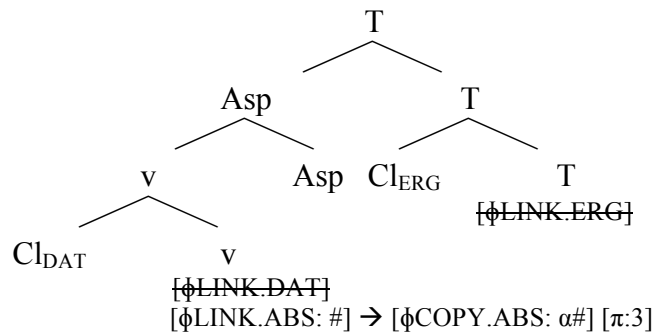


b. *Transitive: 3rd Person ABS*



In ditransitives, the functional heads considered are v and T. T Agree-Links with the ERG argument, which is not eligible for Agree-Copy and receives default features. v Agree-Links with the DAT argument, and the ABS argument in Number only; only ABS Number features are Agree-Copied. This is shown in (21).

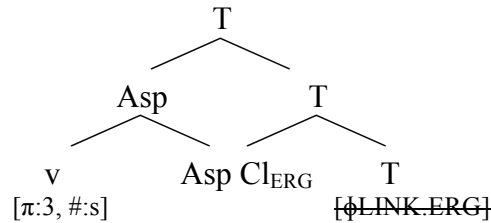
(21) *Ditransitives*



Finally, consider an exceptional case that motivated the restriction on the accessibility of arguments for Agree-Copy, shown in (22): an intransitive unergative. Here, the heads being

considered are *v* and *T*; in both, *T* Agree-Links with the ERG argument but is not accessible for Agree-Copy. In unergatives, *v* does not Agree-Link with anything, and therefore receives default features (22), as expected. This construction shows the utility of limiting accessibility of post-syntactic agreement.

(22) *True unergatives*



This section has demonstrated the Agree-Copy operation, the first to occur in the post-syntactic component. The rule is formulated so that only ABS arguments are eligible for Agree-Copy, based on m-case assignment and a limited hierarchy of accessibility for the operation. When Agree-Copy is not available, the functional head receives default (3rd Person singular) agreement features.

2.1.2 Fission

The operation Fission splits what was one terminal node in the syntax into two morphemes. Early instantiations of the operation (Halle, 2000; Noyer, 1992) characterize Fission as a post-Vocabulary Insertion operation in which a Vocabulary Item (VI) is inserted into a terminal node, and a position for a second VI is created and filled by one from the same list as the first. This operation is adapted by Arregi & Nevins (2012); its place in the derivation is long before Vocabulary Insertion, and is used to account for the plural marker /*(t)e*/ seen in all 2nd and 3rd Person plural clitics regardless of case (Arregi & Nevins, 2012). These clitics are shown in Table 10.

Table 10. 2nd and 3rd Person plural clitics

	ABS	ERG	DAT
2.PL	z- -te	-zue	-zue
3.PL		-te	-te

Although /*(t)e*/ appears in all of the forms in Table 10, it is the 2nd Person ABS clitic that shows the necessity of Plural Fission. It is clear that some morphological operation must occur: the syntax generates but one clitic per argument, but in the case of 2nd Person ABS arguments, this clitic appears at first glance to be a circumfix around the anchor of AUX:

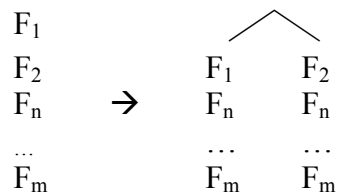
- (23) **z-ar-a-te**
2.ABS-2S.AUX-T-PL

There is no ready syntactic explanation for why the 2nd Person ABS clitic takes this form, suggesting that it is a post-syntactic operation that splits the 2nd Person ABS clitic into two.

The application of the Fission rule in Batua requires no adaptation from Arregi & Nevins' instantiation.

(24) *Plural Fission*

- a. The structural description of a (morphological) Fission rule has three terms: a category *C*, a feature *F*₁, and a feature *F*₂
- b. The structural change splits a morpheme of category *C* containing *F*₁ and *F*₂ as follows:



(Arregi & Nevins, 2012, p. 129)

In (24), the category is D (the clitic), and features *F*₁ and *F*₂ are [-author] and [-singular]. This is specified in the following statement.

- (25) Plural Fission: Clitic, [-author], [-singular]

(Arregi & Nevins, 2012, p. 129)

With regard to the order that the clitics appear, Arregi & Nevins ensure that the clitic containing the Person feature precede that with the Number feature by employing the following blocking constraint.

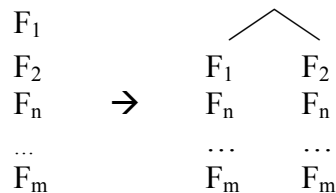
(26) *Person-Number Order*

Given two clitics Cl_1 and Cl_2 such that Cl_1 and Cl_2 have the same case features and Cl_2 is [-singular], Cl_1 must precede Cl_2 .

(Arregi & Nevins, 2012, p. 265:(#69))

Illustrated accounts of Fission like Halle (2000) offer no indication as to what conditions the linear order in which morphemes appear after undergoing Fission; to account for the Person—Number order observed in clitic Fission in Basque—I suggest building the Person-Number Order constraint into the Fission statement in (24b), revised as (27) here; note that this does not change the implications of (24b) + (26), but rather reduces them to one rule.

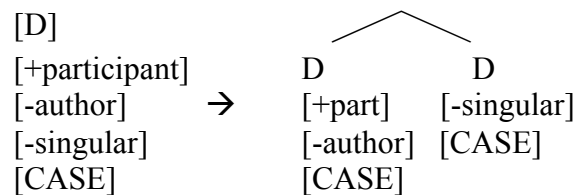
(27) The structural change splits a morpheme of category C containing F_1 and F_2 as follows:



Terminal nodes are ordered such that, if the new Cl_1 and Cl_2 share a case feature, and Cl_2 is [-singular], Cl_1 must precede Cl_2 .

The application of (24)/(27) is demonstrated with a 2nd Person plural ABS clitic in (28).

(28) *Plural Fission: Applied*



The Fission rule in (28) shows that the feature set associated with the 2nd Person ABS doubled clitic in the syntax is split into two morphemes of the same category; one morpheme contains Person information ([+participant, -author]) while the other contains the Number feature ([-

singular]). Now that these features have been isolated, the Number morpheme (the plural marker) is free to move independently of the Person morpheme, allowing the 2nd Person plural ABS clitic to appear as a circumfix.⁹

Having demonstrated the application of the Plural Fission rule in (28), I return to the statement in (25). The content of this statement is not at issue. Like many language-specific morphological quirks, this rule applies to a certain class of object (clitics), and not to all items in that class. Worth considering, however, is the theoretical status of (25). As formulated, it is a language-specific statement that motivates the morphological operation. It is not clear the relationship that this statement has to the morphological derivation process, or its status within the architecture of DM.

This is to say, it is not immediately clear *why* certain operations occur within the DM framework. Obviously, some operations are universal in DM, and are motivated by logical necessity. For example, Linearization always occurs, and must exist because some structural manipulation must occur outside of the restriction of syntactic hierarchies. Vocabulary Insertion must occur because morphemes must take a phonological form in order to be expressed. But the catalyst for language-specific, non-requisite operations is not as clear.

Consider rules like (24) and statements like (25), and how they interact to derive a plural clitic. How is this information stored in the Exponence Conversion module, and what kinds of mechanisms are necessary to process this information and effect the structural change? And finally, there is a question of learnability: are these rules and their motivating factors expressed in a way in which they could be gleaned from input alone?

⁹ The movement by which this is accomplished is discussed in Section 2.4 below.

I suggest that modules are equipped with a narrow inventory of language-specific statements or constraints that are assessed within that module alone.¹⁰ When the derivation reaches a given module, it is assessed in small pieces (the exact size of which in terms of Morphological Words (M-Words) and Subwords is to be determined) by some scanning mechanism that looks to see that no specific statements are breached. These statements are correlated with repair rules and if a structure is found to be in violation, the repair is enacted. This is illustrated in Figure 3.

¹⁰ A benefit of limiting these statements to individual modules is that a later operation can defy a previous module's requirements.

Figure 3. Exponence Conversion Repair + Scan -- Fission

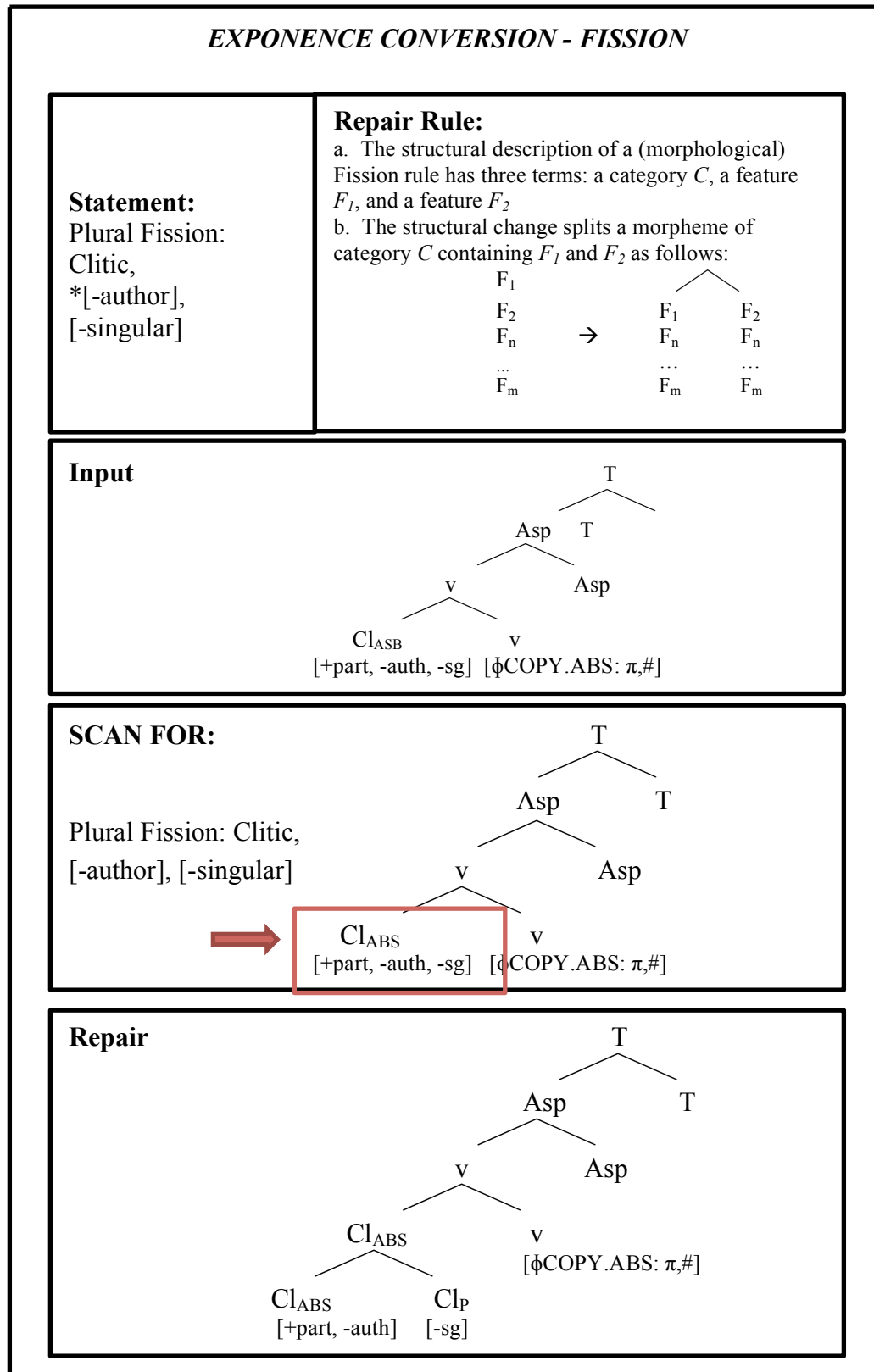


Figure 3 illustrates the module-internal steps suggested to formalize the way in which post-syntactic operations are motivated and applied. Remaining post-syntactic operations will be described in terms of language-specific statement and repair rule combinations.

As for the learnability issue, there are three points that need to be considered, all of which can find comparisons in other linguistic theories: i) language-specific statements/repair rule combinations; ii) modular approach to derivation; iii) association of statements/rules with modules. First, language-specific statements/repair rules are not problematic. These are observations that linguists have gleaned from studying the data, and are likely correlations that learners could (unconsciously) assemble from early and frequent exposure to the language. Similar types of statements and repairs are not considered problematic for other theories (e.g., the constraints of Optimality Theory). Second, with regard to the modular approach to post-syntactic operations, compartmentalization of a derivation has not been traditionally regarded as an impediment to learnability (consider for example, phase-based derivation in the syntax). Finally, the association of specific rules with certain modules can be compared to ordered, transformational phonology rules. From the perspective of the learner, who is not conscious of the changes made to underlying representations, rules can be learned via negative evidence (e.g., for phonology, if certain underlying consonant clusters are disbanded via epenthesis, these consonant clusters are never observed) and their ordering from interactive processes (e.g., bleeding/feeding rules). This can be taken as evidence that although learners do not have evidence for every step of the derivational process, operations in a fixed sequence are not problematic for learnability.

Finally, it is notable that the scanning procedure presented here does bear resemblance to the syntactic notion of filters (Chomsky, 1981), in that they introduce language-specific rules

with seemingly little restriction or motivation. Filters in syntactic theory have been abandoned in favor of more generalizable and strongly motivated (i.e., feature-based) mechanisms for ruling out unacceptable constructions. I acknowledge that the statement + repair combinations in the scanning procedure here are rather stipulative; the statement in Figure 3, for instance, does not arise from any deep-seated fact about the nature of the [-author] or [-singular] feature but rather from an observation about the treatment of this feature combination in a particular language. In this regard, the scanning procedure does not fare better than filters, nor for e.g., the language-specific statements provided in the DM literature to this point. However, I suggest that even though these constraints are not strongly motivated, that at some point the grammar does need to provide an avenue for cross-linguistic variation to be addressed. The benefit of doing so within a procedure like that advocated here is that it organizes the presentation of constraints and their associated repairs in a generalizable way, which facilitates cross-linguistic comparison of morphological particularities. Therefore, it is not claimed that this scanning procedure somehow better motivates the constraints that it presents, but rather that the packaging of this information is more formalized and generally more useful for comparative morphological analysis in the DM framework.

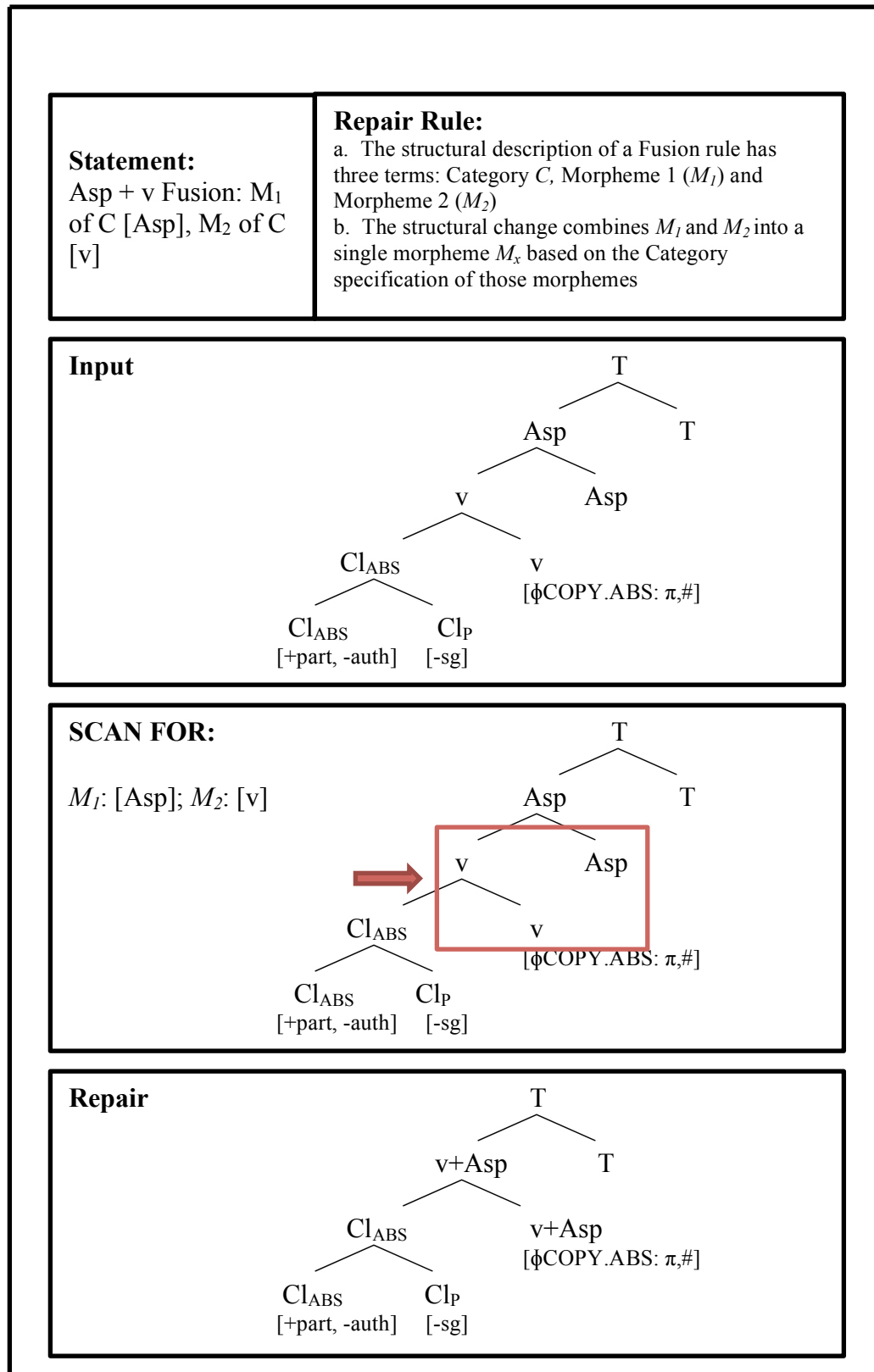
This section has defined and demonstrated the Plural Fission operation, and has suggested a procedure by which such operations are motivated and enacted. The procedure isolates language-specific statements and associated repair operations within a specific module; upon the receipt of input, the structure is scanned and if there are contradictions with any statements housed in the module, repairs are enacted. This procedure was examined from a learnability perspective, and was found to have shared characteristics with other theories that are not traditionally viewed as problematic for learners.

2.1.3 Fusion

The final operation in this module is Fusion, a process by which two terminal nodes are consolidated into one. I suggest that the Asp head undergoes Fusion with *v* to form a single head. As aspect features are not morphologically realized on AUX in the Batua dialect, it is difficult to be sure that this operation does, in fact, occur. However, I take the observed dependency in the forms of *v* and T as evidence for the adjacency of these heads, post-syntactically. By ‘dependency’, I refer to the fact that the form of *v* is sensitive to the presence or absence of ERG and DAT doubled clitics, while the form of T is sensitive to the form of *v*. Effecting this dependency can be accomplished in a straightforward way through the specification of VIs if these two heads are consecutive.

Thus, applying the scanning procedure above, the process in Figure 4 shows the conflation of *v* and Asp via Fusion.

Figure 4. Exponence Conversion Repair + Scan – Fusion



In Figure 4, the scanning procedure assesses input to determine whether it contains two morphemes, one that is Asp and one that is v. If it finds such input, the two morphemes are reduced to one. This operation is highly stipulative, based exclusively on the subsequent need of T to reference v when determining its form. Future work will seek to offer stronger evidence for this operation.

2.2 Feature Markedness

The second module in Arregi & Nevins's architecture is Feature Markedness, which is responsible for assessing "well-formedness...through specific morphotactic constraints on feature co-occurrence, which may call for the enactment of repair operations that delete these features, or the terminals containing them." The operation that applies to the Batua AUX in this module (Participant Dissimilation, Section 2.2.1) is a good illustration of the efficacy of the module-internal procedure proposed in Section 2.1.2 above; another operation (Plural Clitic Impoverishment, Section 2.2.2) in this module that applies in the Biscayan dialects studied by Arregi & Nevins but not in Batua is briefly discussed as evidence for very language-specific statements guiding the operations in these modules.

2.2.1 Person-Match Prohibition – evidence for dialect-specific repairs

Like Plural Fission, the operation Arregi & Nevins term "Participant Dissimilation" is a pre-Linearization operation that is not ubiquitous in all AUX derivations. The broad purpose of this operation is to rule out illegal feature combinations between clitics, a sensitivity that is observed (albeit with different restrictions) in all Basque dialects. The function is the deletion of specific features (or of entire clitics) in certain featural contexts. Arregi & Nevins introduce this restriction based on a principle that they term Syntagmatic Participant Markedness; this is shown in (29).

(29) *Syntagmatic Participant Markedness*

An auxiliary M-word cannot contain two clitics Cl_1 and Cl_2 such that Cl_1 is specified as [+participant, ϕ] and Cl_2 is specified as [+participant, ψ] (where ϕ and ψ range over dialect-particular feature sets).

(Arregi & Nevins, 2012, p. 206)

In the dialects that they study, this principle explains behavior observed in triggering featural environments. Repairs for triggering combinations include deletion (30a) and dissimilation of a feature (30b).

- (30) a. Eroa-n bear s-ara / *s-aitu-**u** eskola-ra
take-INF must 2.ABS-2S.be / * 2.ABS-have.2-**1P.ERG**
'We have to take you to school'

[Zamudio] (Arregi & Nevins, 2012, p. 212:(#21))

- b. Gu-k seue-k ikusi s-aitu-**ø**-s-e /
We-ERG you-PL.ABS seen 2.ABS-have.2-**3S.ERG**-2.P-PL /

*s-aitu-**gu**-s-e
2.ABS-have.2-**1P.ERG**-2.P-PL
'We have seen you (PL)'

[Alboniga] (Arregi & Nevins, 2012, p. 220:(#40))

These repairs are ungrammatical in Batua, while the full AUX form (which is ungrammatical in the Zamudio and Alboniga dialects) saves the sentence, as shown in (31).

- (31) a. Gu-k zu-**ø** eraman behar *z-ara / z-aitu-gu eskola-ra
We-ERG you-ABS take.INF must 2.ABS-be.2 / 2.ABS-have.2-1P.ERG school-to
'We have to take you to school'

- b. Gu-k zuek-**ø** ikusi *z-aituz-te-**ø** / z-aituz-te-gu
We-ERG you.P-ABS seen 2.ABS-have.2-PL-3S.ERG / 2.ABS-have.2-PL-1P.ERG
'We have seen y'all'

In (31), the opposite pattern holds for Batua than is observed for the dialects in (30). This suggests that these 1st/2nd Person clitic combinations are not marked in all dialects, and on the procedure adopted here would be violate a constraint in Batua tagging them for subsequent repair.

However, Arregi & Nevins claim that the Syntagmatic Participant Markedness principle holds for all dialects of Basque, given that the features indicated by ϕ and ψ may vary. Technically speaking, the Syntagmatic Participant Markedness principle does hold in Batua; here, the features ϕ and ψ are [author] features of matching value. This rules out combinations of 1st and 2nd Person clitics, regardless of number; this constraint rules out the following unattested AUX forms.

Table 11. Unattested AUX forms

Transitive (ABS-ERG)							
1S-1S	1P-1S	1S-1P	1P-1P	2S-2S	2P-2S	2S-2P	2P-2P
*naut	*gaitut	*naugu	*gaitugu	*zaituzu	*zaituztezu	*zaituzue	*zaituzteue
Ditransitive (DAT-ERG; ABS = 3S throughout)							
1S-1S	1P-1S	1S-1P	1P-1P	2S-2S-	2P-2S	2S-2P	2P-2P
*didat	*digut	*didagu	*digugu	*dizuzu	*dizuezu	*dizuzue	*dizuezue

However, Batua does not demonstrate the deletion and dissimilation repair strategies shown in (30); likely this is because these feature combinations are ruled out in the syntax due to binding restrictions and so MS is never confronted with the marked feature combinations.

With regard to binding, Laka (1996) notes that in Basque, anaphora and reciprocals need to find their antecedents in the same sentence, as in (32). Note that Basque lacks anaphoric pronouns; instead, the antecedent appears in the DP ‘*X’s head*’.

- (32) Ni-k neure burua ikusi d-u-t
 I-ERG my head.ABS seen L-AUX.2.S-1.S.ERG
 ‘I have seen myself’

(Cf. Laka, 1993a, p. 54)

Although the antecedent may follow the anaphora/reciprocals in linear order, this is likely because Basque allows free word order; the antecedent is still expected to generate in a syntactically higher position than the anaphor/reciprocal, as in (33).

- (33) *neure burua-k ikusi n-au-ø ni
 my head-ERG seen 1S.ABS-have.1S-3S.ERG I.ABS
 ‘Myself has seen me’

(Laka, 1996, p. (#85))

This characterization aligns with Principle A of Binding Theory (Chomsky, 1981, 1986), suggesting that the reason that [+participant] clitics with matching [±author] features do not surface in Basque is not due to a morphological restriction, as in the Zamudio and Alboniga examples in (30b), but due to syntactic restrictions.

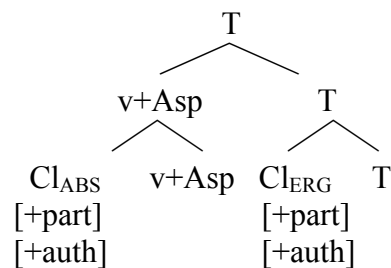
For the sake of completeness, if binding did not rule out all of the [+participant, α author] combinations, the Syntagmatic Participant Markedness principle could be incorporated into the constraint system presented here. In this instance, however, the structure would be irreparable and the derivation would crash. This operation is illustrated in (34) below, termed the *Person-Match Prohibition* for Batua.

- (34) *Person-Match Prohibition: Applied*

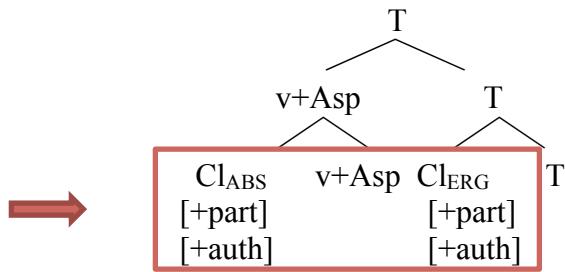
a. **Statement/Repair Rule**

- i. *Clitics: [+participant, α author]
- ii. The structural description of a Participant Dissimilation rule has two clitics: Cl_1 and Cl_2 , each containing the features: [+participant], α [author] The structural change is that the derivation crashes and cannot continue.

b. **Input**



c. **SCAN**



d. **Repair**

CRASH

Most notable about the derivation in (34) is the “repair”, or lack thereof. In the case of morphological crashes like in (34), there are repair strategies available but they are simply not linked to the language-specific statement. The difference in how Batua treats this prohibition versus their repairs in Biscayan dialects shows that not only do languages differ in the repairs that they adopt, but dialects do too.¹¹ This observation opens the door for further inter-dialectal repair differences, or even the possibility of free variation in the repairs available to an individual speaker.

2.2.2 Plural Clitic Impoverishment – evidence for dialect-specific statements

This section briefly describes the Plural Clitic Impoverishment operation proposed by Arregi & Nevins, and shows that it is not applicable in Batua. This section is offered as evidence for the restricted scope of the statement + repair rule combinations proposed for these modules by showing that a statement + repair that is valid in one dialect spells trouble if included in the AUX derivation of another.

¹¹ Admittedly, the line between what constitutes languages and dialects of the same language is not clear. Without intending to claim a firm distinction, here I refer to different ‘languages’ and ‘dialects’ as a means of acknowledging the distance between two language systems. Here, I mean different language to refer to Basque versus unrelated linguistic systems, which is clearer than in many cases as Basque is a language isolate; meanwhile, by dialects, I mean to refer to

Arregi & Nevins (2012, p. 217) define Plural Clitic Impoverishment, a Feature

Markedness operation, as follows.

(35) *Plural Clitic Impoverishment*

- a. Structural description: an auxiliary M-word with two clitics Cl_1 and Cl_2 such that Cl_1 is [-singular], Cl_2 is [Ergative, +participant], and Cl_1 and Cl_2 are not sisters
- b. Structural change: delete [-singular] in Cl_1

This operation targets AUXs that include a plural clitic and an Ergative 1st or 2nd Person clitic; the result is that the [-singular] feature of the first clitic is deleted. An example from Ondarru is shown in (36).

(36) Gu-k sue-k ikus-i s-aitu-(*e)-gu (>satxuau)
 we-ERG you(SG)¹²-ABS see-PRF 2.ABS-AUX.2.PL-(CL.A.PL)-1.PL.ERG
 ‘We have seen you’

(Arregi & Nevins, 2012, p. 225)

In (36), the plural clitic generated when the 2nd Person plural ABS doubled clitic undergoes Plural Fission is effectively deleted by the impoverishment of its [-singular] feature. This phenomenon is not observed in Batua, as shown in (37).

(37) a. Gu-k zuek ikusi z-aituz-te-gu
 We-ERG you.PL.ABS seen 2.ABS-AUX.2.ABS-PL-1.PL.ERG
 ‘We have seen you(pl)’

b. * Gu-k zuek ikusi z-aitu-gu
 We-ERG you.PL.ABS seen 2.ABS-AUX.2.ABS-PL-1.PL.ERG
 ‘We have seen you(pl)’

The application of a statement and rule like (35) in Batua would result in an ungrammatical sentence for that dialect. This demonstrates that the specificity of the rule-inducing statements in the derivations: although the repair techniques (e.g., Impoverishment) may be part of some more cross-linguistically applicable set of operations, the statements that motivate these rules are

¹² It is unclear why the direct object *suek* is glossed as singular ABS in Arregi & Nevins’ text. In order to demonstrate that the ABS plural clitic is unwarranted, *suek* should be understood as plural.

highly specific to languages and even individual dialects (as are repair techniques, as shown in Section 2.2.1).

2.3 Morphological Concord

The next module in the sequence is Morphological Concord, which “set[...s] up particular terminals for Vocabulary Insertion based on post-syntactic structural descriptions. These operations involve feature insertion, though crucially only those features that are particular to morphology” (Arregi & Nevins, 2012, 5). The operations relevant to the forms under consideration here are Have-Insertion and Appl-Insertion (Section 2.3.1).

2.3.1 Have-Insertion/Apppl-Insertion

To this point, I have been referring to categories of AUX by the argument structure with which they are commonly associated, i.e., ‘intransitive’, ‘transitive’, and ‘ditransitive’ AUX. However, I have noted that valency is not an accurate predictor of AUX form, an observation made by Arregi (2004) and discussed elsewhere (Arregi & Nevins, 2012; Preminger, 2014). An example is shown in (38).

(38) Jon-ek korritu d-u-ø
 Jon-ERG run L-have.3S-3S.ERG
 ‘Jon has run’

(Hualde & Ortiz de Urbina, 2003, p. 390:(#585b))

In (38), there is a true unergative, which has been argued to lack an internal argument. However, the AUX that arises is ‘transitive’ – not the ‘intransitive’ form *da* expected for a one-place predicate.

Arregi & Nevins (2012) propose that the proper indicator of the AUX form that will arise is the presence of the ERG and DAT clitics included. What I have been calling the ‘intransitive’ AUX appears in the absence of ERG and DAT clitics, while ‘transitive’ AUX hosts an ERG

clitic, ‘ditransitive’ hosts both an ERG and a DAT, and ‘applicative intransitive’ bears only a DAT.

At first glance, it would seem that this information could come directly from the syntax; v could be sent to the morphology already somehow indicating its selectional restrictions (i.e., if it selected a verb with an external argument, or that takes ApplP as a complement). However, selectional restrictions alone would not account for all repairs, e.g., those proposed for ABS Promotion by Arregi & Nevins (2012). For example, the v in those constructions selects a verb without an external argument, and with an ApplP complement. The fact that the direct object raises to external argument position, obtaining ERG Case and generating an ERG clitic, is beyond the purview of the selectional properties of v. Therefore, an alternative is to appeal to the presence/absence of ERG and DAT clitics that have been shipped out from the syntax.

In order to realize the effects of ERG and DAT clitics on the form of AUX, Arregi & Nevins (2012) propose a morphological operation in which the features [+have] and [+appl] are inserted into the morpheme T, based on the presence or absence of ERG and DAT clitics. (Recall from Chapter 2 that their AUX does not include v.) The insertion of these features before Vocabulary Insertion ensures that the argument structure of the verb will be represented on the anchor of AUX, as shown in (39).

- (39) a. Intransitive
d-ira
L-PL.AUX
- b. Transitive
d-itu- \emptyset
L-PL.AUX-3S.ERG
- c. Ditransitive
d-izki-o- \emptyset
L-PL.AUX-3S.DAT-3S.ERG

As seen in (39), the anchor of AUX changes form depending on the argument structure of the clause in which it occurs. In all three examples, the ABS argument with which AUX Agrees is 3rd Person Plural. It would be expected for the form of the anchor to remain the same if Tense and the Phi features of the Goal are consistent, but this is not observed. Rather, the form changes with the addition of ERG and DAT clitics.

The values of the inserted [have] and [appl] features are conditioned by the presence of ERG/DAT clitics.

- (40) a. *Have-Insertion*
 Insert the feature [+have] in T in the context of an ergative clitic. Insert [-have] otherwise. (Arregi & Nevins, 2012, p. 139)
- b. *Appl-Insertion*
 Insert the feature [+appl] in T in the context of a dative clitic. Insert the feature [-appl] otherwise. (Arregi & Nevins, 2012, p. 141)

The combination of these insertion rules yields the following feature sets for v seen in Figure 5.

Figure 5. [+have]/[+appl] feature combinations on v

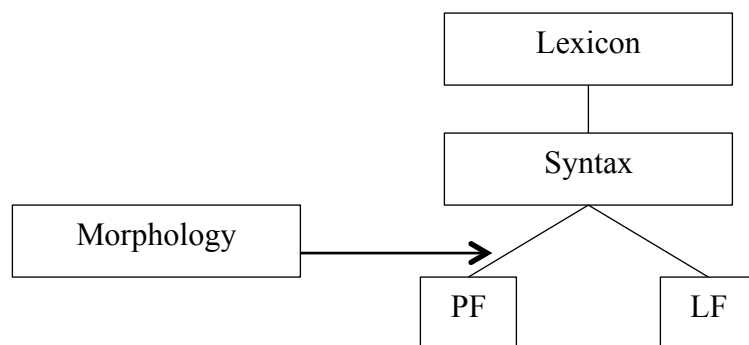
	[+appl]	[-appl]
[+have]	L-anchor-DAT-ERG Observed in: ditransitives, ABS Promotion	L/ABS-anchor-ERG Observed in: transitives, true unergatives
[-have]	L/ABS-anchor-DAT Observed in: applicative intransitives (DAT-ABS/ABS-DAT)	L/ABS-anchor Observed in: intransitives

The benefit of this proposal is that it simply accounts for the four-way distinction in AUX forms in a way that is accessible to the morphology (i.e., by appealing to features and morphological context within the AUX M-word); a drawback concerns the identity these features. Arregi & Nevins are careful to note that the features inserted in this component are

meaningful only to the morphology. Since they are inserted post-syntactically, these features are not seen by the syntax and inadvertently targeted there. However, there is the question of the interpretation of [have] and [appl] by the semantic component. What, exactly, do [have] and [appl] mean? Taken in context of a broader feature inventory, it is clear that they do not have an obvious semantic correlate, like [Number] or [Person], nor is this required, based on the explanation of the Morphological Concord module.

Ultimately, whether or not the post-syntactic features [have] and [appl] require a semantic interpretation at all relies on the model of the grammar that is adopted. Assuming any iteration of the Y-model of grammar (Chomsky, 1965, 1995 or anything in between), any features that are not present in the syntax need not be shared by post-syntactic modules.

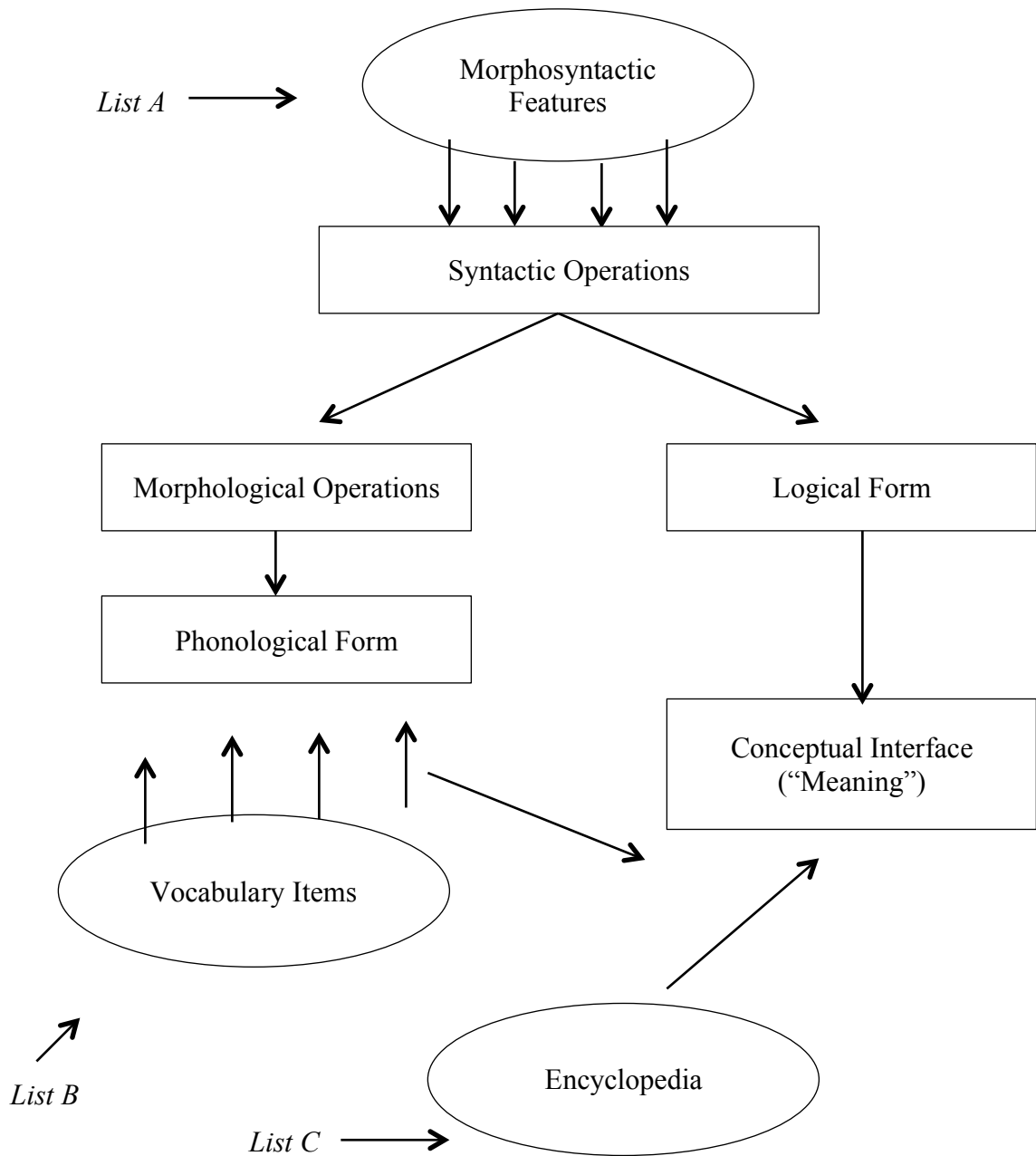
Figure 6. Basic Y-model of grammar



In Figure 6, there is no relation between how the structure shipped from the syntax is Spelled Out or interpreted. Thus, features inserted at Morphological Structure are contained within PF and are not recognized by LF.

However, not all models of grammar assume a complete disconnect between PF and LF. Consider, for example, the model proposed in association with DM, given by Harley & Noyer (1999, p. 3:(#1)). Although this structure builds on the Y model, there is more communication between components of the grammar.

Figure 7. Y-Model for DM



The model in Figure 7 preserves the independence of PF and LF, but not for the entire derivation. This schema makes the critical link of these components to the Conceptual Interface, where “meaning” is located. Ultimately, this means that what is pronounced and what is semantically interpreted do come together at a final point in the derivation. However, this still does not mandate that the features [have] and [appl] have a semantic meaning. The features are

inserted in the Morphological Operation module; as in the Y-model in Figure 6, they avoid the LF component. The question is whether the pronunciation of the anchor of AUX, which is influenced by this feature combination, is meaningful at the Conceptual Interface. I suggest that even in this setup, these features' lack of semantic interpretation is unproblematic. The Conceptual Interface reconciles the semantic interpretation with the pronunciation – if the features are not considered at LF, different AUX anchors are simply allomorphs, and unproblematic for the speaker.

This discussion has examined Arregi & Nevins's claim that the features [have] and [appl] are meaningful only within the morphology, and has shown that if a Y-model of grammar is assumed, this is entirely plausible and the lack of semantic interpretation of the features is unproblematic. The features are inserted based on the presence and absence of ERG/DAT doubled clitics and serve as a conditioning factor for allomorphy observed on the anchor of AUX. I adopt this explanation for the form of AUX going forward, and modify Arregi & Nevins's definition to account for the role of *v* in AUX on my analysis.

(41) *Have-Insertion*

- a. The structural description of Have-Insertion assesses the featural content of the morpheme *v*(+Asp), based on the presence/absence of an ergative clitic
- b. The structural change inserts [+have] into *v* **iff**:
 - i. An ergative clitic is present within T^{0MAX}
 - ii. [-have] is inserted otherwise

(42) *Appl-Insertion*

- a. The structural description of Appl-Insertion assesses the featural content of the morpheme *v*(+Asp), based on the presence/absence of a dative clitic
- b. The structural change inserts [+appl] into *v* **iff**:
 - i. A dative clitic is present within T^{0MAX}
 - ii. [-appl] is inserted otherwise

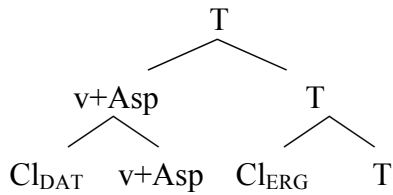
The application of these rules is demonstrated in (43) and (44).

(43) *Have-Insertion: Applied*

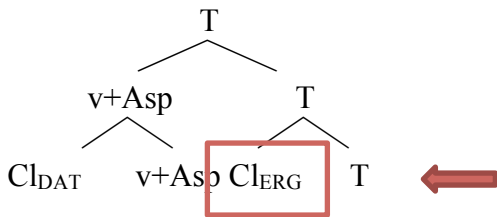
a. **Statement + Repair Rule**

- i. [+have] inserted based on the presence/absence of ERG doubled clitic
- ii. The structural description of Have-Insertion assesses the featural content of the morpheme v(+Asp), based on the presence/absence of an ergative clitic
The structural change inserts [+have] into v **iff**:
 - i. An ergative clitic is present within T^{0MAX}
 - ii. [-have] is inserted otherwise

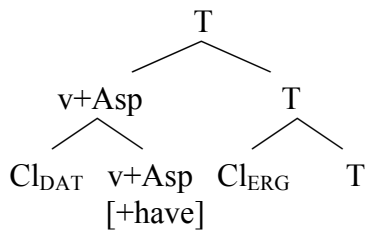
b. **Input**



c. **SCAN**



d. **Repair**

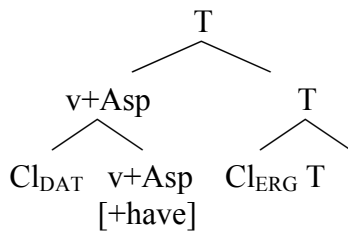


(44) *Appl-Insertion: Applied*

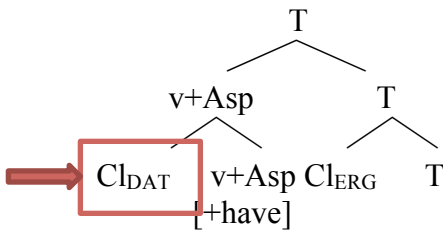
a. **Statement + Repair Rule**

- i. [+appl] inserted based on the presence/absence of DAT doubled clitic
- ii. The structural description of Appl-Insertion assesses the featural content of the morpheme v(+Asp), based on the presence/absence of an ergative clitic
The structural change inserts [+appl] into v **iff**:
 - i. An dative clitic is present within T^{0MAX}
 - ii. [-appl] is inserted otherwise

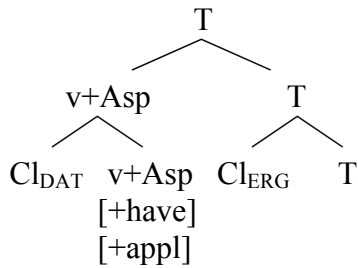
b. **Input**



c. **SCAN**



d. **Repair**



2.4 Linearization & Linear Operations

This section discusses Linearization, a module that consists of one operation that sheds relationships of syntactic hierarchy that have persisted so far through the derivation, turning the input into a linear structure.

Linearization is a requisite part of all DM operations, in which syntactic structure is collapsed and morphemes are freed from syntactic dominance relations; at this point, the relevant relationship becomes one of adjacency. Linearization is defined as follows.

(45) $LIN [X Y] \rightarrow (X * Y) \text{ or } (Y * X)$ (Embick & Noyer, 2007, p. 292)

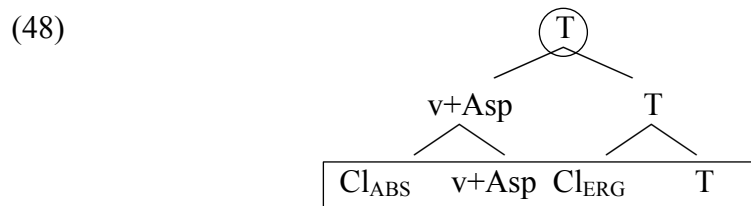
In (45), the sisters X and Y (to the left of the arrow) are compacted into a pair of adjacent terminal nodes (to the right of the arrow); note that syntactic headedness does not determine the order in which X and Y concatenate. In the case of (Y * X), this reversal of syntactic headedness is accomplished via Local Dislocation.

Local Dislocation is a process by which morphological units can move, if adjacency and boundaries are respected. Embick & Noyer (2001) and Embick (2007) limit these boundaries to Subwords and M-Words, noting Subwords can only concatenate with Subwords, and M-Words only with M-Words. M-words and Subwords are respectively defined as follows in (46) and (47).

(46) *Morphosyntactic Word (M-Word)*
 At the input to Morphology, a node X^0 is (by definition) a *morphosyntactic word* (MWd) iff X^0 is the highest segment of an X^0 not contained in another X^0 . (Embick & Noyer, 2001, p. 574)

(47) *Subword*
 A node X^0 is a *subword* (SWd) if X^0 is a terminal node and not an MWd. (Embick & Noyer, 2001, p. 574)

These definitions can be exemplified with the transitive Basque AUX structure in (48) below.



In (48), there is only one M-word: T^0 , shown in the circle. Per the definition in (46), it is the highest segment not contained within another X^0 ; v+Asp is not an M-word because T dominates

it. The Subwords, shown in the rectangle, are the ABS clitic, v+Asp, the ERG clitic, and T, per the definition in (47).

The discussion of Local Dislocation is relevant to the Linearization operation because Local Dislocation follows Linearization, when it applies. The structure in (48) shows that not all morphemes in the Basque AUX are in their surface position before Linearization; in the example above, the ERG clitic must move to the right of T. This movement is possible via Local Dislocation between Subwords. However, the movement of the ERG clitic is the simplest case of movement required to achieve surface order; in some cases, Subwords must move multiple times to achieve their final position. This warrants further investigation into the Linearization process, specifically the role of projections between the M-word and Subword levels.

The underlying question, particularly relevant for cases like Basque in which numerous Subwords appear within a single M-Word, is as follows: does any remnant of syntactic sisterhood relationships remain between Subwords? Based on the discussion in Embick & Noyer (2001), extrapolation beyond the Linearization rule in (45) would suggest that these relationships are respected, limiting Local Dislocation between Subwords that are not sisters.

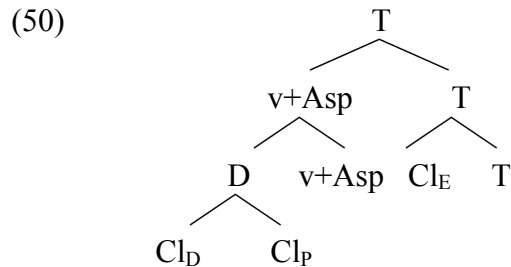


The possible Linearized structures in (49) would rule out linear orders such as $(Y * X * Z)$, on the basis that X would not be able to penetrate the brackets (i.e., the sisterhood relationship) between Y and Z. However, once the syntactic hierarchy is collapsed, X and Y are adjacent Subwords, so it seems intuitive that their ordering would not be impeded by the presence of the

status-less (i.e., not M-word, not Subword) non-terminal Y (mother of Y and Z), represented as brackets.

Although I ultimately argue against it, it could be beneficial to preserve syntactic sisterhood relations through Linearization in deriving some aspects of the Basque AUX.

Consider, for example, a ditransitive AUX with a 2nd or 3rd Person DAT argument, shown in (50).



Recall that AUX cannot begin with a DAT clitic, nor can it begin with a plural clitic. This means that the first two morphemes need to move to the right of v; if syntactic sisterhood of terminal nodes was respected during Linearization, such movement could easily occur via Local Dislocation subsequently.

(51) LIN [[[Cl_D Cl_P] v] [Cl_E T]] → ((v * (Cl_D * Cl_P)) * (Cl_E * T))

However, assuming that these sisterhood relationships indicated by parentheses could not be infiltrated later in the derivation, it would be impossible for the DAT and plural clitics to affix to T, as is observed in (52), because it would necessitate infiltrating the (Cl_E * T) relationship.

(52) d-izk-i-**zu**-e-gu
L-AUX.P(v)-AUX(T)-**2.DAT-P**-1P.ERG

There are many similar situations that arise in deriving the final order of the morphemes that suggest that syntactic sisterhood relationships are no longer respected M-words internally after Linearization. This indicates that all parentheses are removed, offering additional flexibility for

multiple-sequence movement if necessary. The dominant relation between terminal nodes/Subwords goes from hierarchical to one of adjacency.

One final note: I diverge from Arregi & Nevins in that I view Linearization as a one-shot module: it exclusively reduces the syntactic hierarchical structure that it is given into a linear one. Arregi & Nevins (2012, p. 57) propose a Linearization algorithm that accounts for the placement of the dative clitic with respect to the anchor of AUX, and otherwise results in right-headed structures, mirroring syntactic headedness. Due to the fairly uniform application of Linearization across DM analyses, I chose to deal with the fallout from exclusive flattening in the Linear Operation module. The following section explores these post-Linearization operations that achieve the observed surface morpheme order.

2.5 Linear Operations

In this section, I argue against movement via Local Dislocation in favor of movement via Generalized Reduplication (GR) (Harris & Halle, 2005), as do Arregi & Nevins (2012). My analysis complements their case, and differences in the syntactic structure that I generate offer additional indication that Local Dislocation is too cumbersome to easily account for the numerous linear movements required to attain the surface form.

Although it is technically possible to derive surface order via Local Dislocation, the step-wise nature of this operation requires each morpheme that needs to move to do so individually, one position at a time. Each movement is motivated by a constraint (or by the repeated application of the same constraint). GR offers the flexibility to move more than one morpheme at a time, and move that morpheme directly to its surface position. With Local Dislocation, each movement is motivated by a constraint, but since fewer movements are required, fewer constraints need to be postulated. Given the descriptive, stipulative nature of constraints, this is a

desirable outcome. Further, the similarity between constraints and language-specific repair motivating statements allows this operation to be easily integrated into the module architecture described above. Critical to the application of GR is the notion that the constraints are ordered – that is, the structure is assessed for compliance sequentially, and the output of one constraint-based modification serves as the input for assessment of the next constraint.

The remainder of this section proceeds as follows. Section 2.5.1 introduces the GR operation, showing the constraints that motivate its application and the necessity of ordering those constraints. The two constraints in this section alone account for the majority of present tense AUX forms. Where applicable, examples are compared with Local Dislocation derivations. Following this discussion, the remaining constraint-motivated Linear Operations (Ergative Metathesis, Section 2.5.2, and L-support, Section 2.5.3) are introduced.

2.5.1 Generalized Reduplication

Generalized Reduplication (Harris & Halle, 2005) is a combination reduplication and metathesis operation that copies a morphological segment and duplicates it elsewhere in the linear sequence; unnecessary morphemes generated by the copying operation are subsequently deleted. This is schematized as follows.

$$\begin{array}{ll}
 (53) \quad \text{a.} & A [B] C] D \rightarrow \\
 & A-\underline{BC}-BC-D \rightarrow \\
 & A-C-BC-D \\
 & \text{b.} & A [B \{ C] D \rightarrow \\
 & & A-\underline{BC}-BC-D \rightarrow \\
 & & A-B-BC-D
 \end{array}
 \quad (\text{Harris \& Halle, 2005, p. 200})$$

As (53) shows, the segment to be reduplicated is indicated in brackets, with the segment to be deleted indicated by $\}$ to its right or $\{$ to its left. For clarity, this segment is underlined in the reduplicant.

This operation is adopted for post-Linearization movement by Arregi & Nevins (2012), with broad cross-linguistic support. Their position, which I also adopt, is that GR is motivated by

language-specific constraints on the Linearized structure. Due to my view of Linearization as a one-shot operation, and structural divergences from Arregi & Nevins, my constraint inventory differs somewhat from theirs. Additionally, their ordering of GR operations (should it need to occur more than once) is motivated by distance: shorter moves happen before long-distance ones. In this analysis, a constraint hierarchy orders multiple GRs; if one constraint finds multiple violations within a structure, then the distance of movement plays a role (shorter movement first). These constraints, and their applications and consequences, are shown below.

2.5.1.1 Constraint #1: AFFIX

The highest-ranked and hardest-working GR constraint is AFFIX. AFFIX is a constraint and repair that is sensitive to *both* a clitic’s need to be a prefix or a suffix, and a functional morpheme’s ability to host a prefix or a suffix. Of the 13 possible AUX structures, AFFIX applies at least once in 11 of them. This constraint is inspired by AFFIX metathesis of Legate (2008), a post-Vocabulary Insertion operation motivated by Warlpiri second-position clitics, defined as follows.

$$(54) \quad \text{AFFIX} \\ [x^{\theta} Y * Z \dots] \rightarrow [x^{\theta} Z+Y \dots] \quad (\text{Legate, 2008, p. 53})$$

In discussing the application of this rule, Legate’s application of AFFIX is sensitive to phonological material: “...after lexical insertion the clitic attempts to adjoin to (“lean on”) preceding phonologically overt material. Only if this attempt fails may AFFIX apply.” (Legate, 2008, p. 53). However, evidence from Basque suggests that this operation must occur before the L-support constraint (Section 2.5.3) is assessed; therefore, it must occur pre-Vocabulary Insertion. The AFFIX constraint and its GR repair can be formalized as follows.

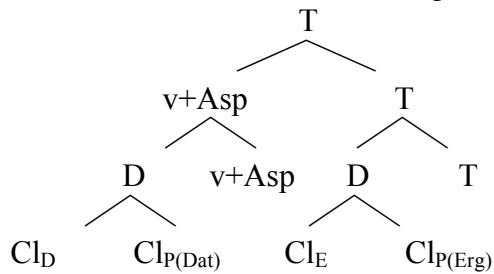
(55) *AFFIX constraint*

- i. The structural description is minimally a clitic with DAT or ERG features (Cl_D or Cl_E) and T
 - If the structure contains two clitics of matching case features ($Cl_E+Cl_{P(Erg)}$ or $Cl_D+Cl_{P(Dat)}$), the structural change treats both as one unit.
- ii. The structural change is movement of the DAT or ERG clitic (cluster) to the immediate right of T via Generalized Reduplication

This constraint is motivated by the need of DAT and ERG clitics to be suffixes, and ability of T (and not v) to host suffixes. The effect of this constraint moves DAT and ERG clitics (and the plural clitics siphoned from them, via Fission) to their M-word final position to the right of T.

This operation applies in all transitive AUX structures, and twice in all ditransitives. In ditransitives, the ERG clitic (cluster) undergoes GR first as that movement is shorter; the DAT clitic(s) movement applies after. This operation is demonstrated in (56).

(56) a. Ditransitive structure – DAT pl, ERG, pl



b. Linearization

$Cl_D - Cl_{P(Dat)} - v - Cl_E - Cl_{P(Erg)} - T$

c. AFFIX violation + repair (ERG)

$Cl_D - Cl_{P(Dat)} - v+Asp - Cl_E - Cl_{P(Erg)} - T \rightarrow$
 $Cl_D - Cl_{P(Dat)} - v+Asp - [Cl_E Cl_{P(Erg)}] \{ T \} \rightarrow$
 $Cl_D - Cl_{P(Dat)} - v+Asp - \underline{Cl_E - Cl_{P(Erg)}} - T - Cl_E - Cl_{P(Erg)} - \underline{T} \rightarrow$
 $Cl_D - Cl_{P(Dat)} - v+Asp - T - Cl_E - Cl_{P(Erg)}$

d. AFFIX violation + repair (DAT)

$Cl_D - Cl_{P(Dat)} - v+Asp - T - Cl_E - Cl_{P(Erg)} \rightarrow$
 $[Cl_D Cl_{P(Dat)}] \{ v+Asp T \} - Cl_E - Cl_{P(Erg)} \rightarrow$
 $\underline{Cl_D - Cl_{P(Dat)}} - v+Asp - T - Cl_D - Cl_{P(Dat)} - \underline{v - T} - Cl_E - Cl_{P(Erg)} \rightarrow$
 $v+Asp - T - Cl_D - Cl_{P(Dat)} - Cl_E - Cl_{P(Erg)}$

As (56) shows, two applications of AFFIX results in the movement of four clitics to their proper surface position. By comparison, movement of these clitics via Local Dislocation is far more laborious, as shown in (57).

(57) Derivation of ditransitive via Local Dislocation

LIN*	Cl _D	*	Cl _{PL}	*	v+Asp	*	Cl _E	*	Cl _{PL}	*	T
vPEN	Cl _D	*	v+Asp	*	Cl _{PL}	*	Cl _E	*	Cl _{PL}	*	T
AFFIX	v+Asp	*	Cl _{PL}	*	Cl _E	*	Cl _{PL}	*	T	+	Cl _D
AFFIX	v+Asp	*	Cl _E	*	Cl _{PL}	*	T	+	Cl _D	+	Cl _{PL}
AFFIX	v+Asp	*	Cl _{PL}	*	T	+	Cl _D	+	Cl _{PL}	+	Cl _E
AFFIX	v+Asp	*	T	+	Cl _D	+	Cl _{PL}	+	Cl _E	+	Cl _{PL}

The chart in (57) shows the same AUX as (56), derived via Local Dislocation.¹³ Due to the step-wise nature of Local Dislocation, each clitic must be moved individually. This involves four applications of the AFFIX constraint, which form a complex clitic cluster suffixed to T. Additionally, AFFIX is not the only constraint involved—a constraint on morphemes before v (vPEN, discussed in the following section) applies to move the DAT plural clitic—but does not even move it to the proper position. This clitic is subject to a second movement motivated by a second constraint. Comparison of (56) to (57) shows that GR offers a more streamlined approach to clitic movement, which has the flexibility to target multiple morphemes for movement and precisely indicate their landing site.

2.5.1.2 Constraint #2: vPEN

The second constraint that initiates GR is v-Peninitiality (vPEN), adapted from Arregi & Nevins' (2012) T-Peninitiality constraint.

¹³ Note that there may be even more operations/step-wise movements involved in deriving this AUX via Local Dislocation, if the DAT clitic cannot move directly to the right of T, which is entirely possible.

(58) *T-Peninitality*

Only one morpheme may precede terminal T within T^{0max} .

(Arregi & Nevins, 2012, p. 258)

In both cases, the constraint is violated by the presence of more than one morpheme to the left of the left-most functional morpheme in AUX (for me, v+Asp, for them, T), and can be formalized as follows.

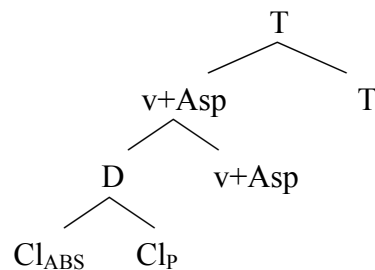
(59) *vPEN Constraint*

- a. The structural description is three morphemes: two clitics, Cl_1 and Cl_2 , preceding the terminal v(+Asp) within T^{0max}
- b. The structural change is that the second morpheme, Cl_2 , moves to the right of T via GR

This constraint moves a plural clitic from a position to the left of the v to the right of T.¹⁴

Although it may seem redundant with the AFFIX constraint, it serves to move the plural clitic of the 2nd ABS argument to its proper position without moving the ABS clitic, too. The application of (59) is shown in (60).

(60) a. Intransitive structure



b. Linearization

$Cl_{ABS} - Cl_P - v+Asp - T$

¹⁴ The landing site here is a stipulation. Since the prohibition is the material to the left of v+Asp, it would be sufficient to move the second clitic to the right of v+Asp. However, this is not the observed landing site of this clitic. GR offers the flexibility to stipulate within a constraint exactly where it should surface, without needing to offer additional steps. If a more step-wise derivation was desired, an additional constraint stating that T cannot host a prefix could be included.

c. vPEN violation + repair

$$\begin{aligned}
 & Cl_{ABS} - Cl_P - v+Asp - T \rightarrow \\
 & Cl_{ABS} [Cl_P] \{ v - T \} \rightarrow \\
 & Cl_{ABS} - \underline{Cl_P} - v+Asp - T - Cl_P - \underline{v+Asp} - T \rightarrow \\
 & Cl_{ABS} - v+Asp - T - Cl_P
 \end{aligned}$$

The derivation in (60) shows that with the application of one constraint + repair, the plural clitic reaches its surface position. In comparison, when this morpheme is moved via Local Dislocation, two different constraints are invoked to obtain the same result.

(61) Derivation of 2nd Plural ABS Intransitive via Local Dislocation

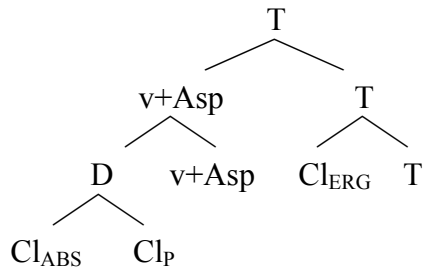
LIN*	Cl _A	*	Cl _{PL}	*	v+Asp	*	T
vPEN	Cl _A	*	v+Asp	*	Cl _{PL}	*	T
AFFIX	Cl _A	*	v+Asp	*	T	*	Cl _{PL}

Due to the step-wise nature of Local Dislocation, the application of vPEN can do no more than move the plural clitic from the left of v+Asp to the right, as seen in the second row of (61). Thus, another constraint (a broader version of AFFIX) moves the clitic the second step, to the right of T. Although multiple Local Dislocations are not inherently problematic, the swift effect of GR is economically preferable.

Together, AFFIX and vPEN can account for the majority of clitic movement in the present tense AUX. However, in order to successfully do so, the constraints must be assessed in order: AFFIX must be entirely satisfied before the application of vPEN. This is demonstrated by comparing the results of different constraint orderings applied in the derivation of the transitive AUX.

(62) AFFIX > vPEN

a. Transitive structure (2nd Person ABS)



b. Linearization

$Cl_A - Cl_P - v+Asp - Cl_E - T$

c. AFFIX violation + repair

$Cl_A - Cl_P - v+Asp - Cl_E - T \rightarrow$

$Cl_A - Cl_P - v+Asp - [Cl_E \} \{ T] \rightarrow$

$Cl_A - Cl_P - v+Asp - \underline{Cl_E} - T - Cl_E - \underline{T} \rightarrow$

$Cl_A - Cl_P - v+Asp - T - Cl_E$

d. vPEN violation + repair

$Cl_A - Cl_P - v+Asp - T - Cl_E \rightarrow$

$Cl_A [Cl_P \} \{ v+Asp - T] Cl_E \rightarrow$

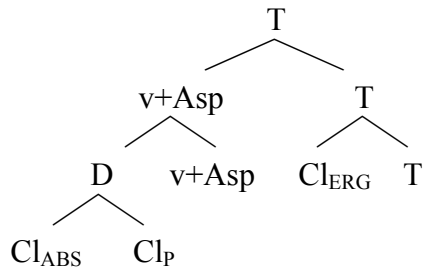
$Cl_A - \underline{Cl_P} - v+Asp - T - Cl_P - \underline{v+Asp} - \underline{T} - Cl_E \rightarrow$

$Cl_A - v+Asp - T - Cl_P - Cl_E$

In (62), the application of AFFIX first moves the ERG clitic from the left to the right of T, and then moves the plural clitic to the immediate right of T and left of the ERG clitic. Consider the result if vPEN applied before AFFIX.

(63) vPEN > AFFIX

a. Transitive structure (2nd Person ABS)



b. Linearization

$Cl_A - Cl_P - v - Cl_E - T$

c. vPEN violation + repair

$Cl_A - Cl_P - v+Asp - Cl_E - T \rightarrow$
 $Cl_A [Cl_P] \{ v+Asp - Cl_E - T \} \rightarrow$
 $Cl_A - \underline{Cl_P} - v+Asp - Cl_E - T - Cl_P - \underline{v+Asp} - \underline{Cl_E} - \underline{T} \rightarrow$
 $Cl_A - v+Asp - Cl_E - T - Cl_P$

d. AFFIX violation + repair

$Cl_A - v+Asp - Cl_E - T - Cl_P \rightarrow$
 $Cl_A - v+Asp - [Cl_E] \{ T \} Cl_P \rightarrow$
 $Cl_A - v+Asp - \underline{Cl_E} - T - Cl_E - \underline{T} - Cl_P$
 $Cl_A - v+Asp - T - Cl_E - Cl_P$

The derivation in (63) obtains the wrong morpheme order: the ERG clitic is to the immediate left of T, to the right of the plural clitic, which is not correct. To correct this, another (less motivated) constraint would be required to invert the ERG and plural clitics. Other incorrect orders are obtained by assessing vPEN before AFFIX in ditransitives. Thus, it is critical that AFFIX is assessed first and is fully satisfied before vPEN is applied.

2.5.2 Ergative Displacement

One more constraint that initiates GR must be discussed before introducing L-Support, the final Linear Operation. This alternation, Ergative Displacement, is a well-known Basque

phenomenon in which the ERG clitic appears in the first (ABS) position in AUX in some past-tense contexts. Laka (1993a, p. 52) describes this alternation in Batua as follows.

- (64) Ergative Displacement:
 if an inflected form has:
- a. a third person absolutive agreement clitic and
 - b. a non-third person ergative agreement clitic and
 - c. it contains either the past tense morpheme
 or the modal morpheme
 or the conditional morpheme
- then
- a. the clitic corresponding to the ergative appears in the canonical place of the absolutive, and
 - b. the absolutive clitic does not appear

The alternation in (64) means that in past tense, modal, or conditional AUX, if the ERG argument is 1st or 2nd Person and the ABS argument is 3rd Person, the ERG clitic will appear in the first position (to the left of v+Asp). AUX forms affected by Ergative Displacement are shown in the right column of Table 12.

Table 12. Ergative Displacement (Past Tense)

Present Tense	Past Tense
d-u -t L-AUX.3S-1S.ERG	n -u -en 1S.ERG-have-TENSE
d-u -zu L-AUX.3S-2S.ERG	z -enu -en 2S.ERG-have-TENSE
d-i -da -zu L-AUX.3S-1S.DAT-2S.ERG	z -eni -da -n 2S.ERG-have-1S.DAT-TENSE
d-i -o -gu L-AUX.2S-3S.DAT-1P.ERG	g -eni -o -n 1P.ERG-have-3S.DAT-TENSE

(Laka, 1993a, p. 53)

The forms in Table 12 compare present tense AUX with their past tense versions having undergone Ergative Displacement. Note that the ERG clitics share the form of the 1st and 2nd Person ABS clitic, shown in Table 2 above. This syncretism can be accommodated via Underspecification, and will be addressed in Section 3 below on Vocabulary Insertion.

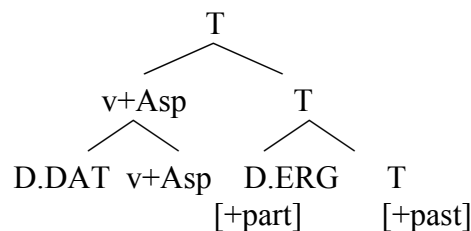
This phenomenon is not difficult to explain, based on the assumption that there are no 3rd Person clitics in Basque. The explanation, put forth by Arregi & Nevins (2012), is that since the ABS clitic position is empty in 3rd Person contexts, the ERG clitic moves to that empty position to satisfy a constraint on *v* being the left-most morpheme. This constraint is termed T-Noninitiality by Arregi & Nevins, and is modified as *v*-Noninitiality (*v*-N) in (65) to accommodate my structure in which *v* is the leftmost anchor morpheme. This constraint holds for all AUX, but the repair varies based on Tense. This section focuses on the ERG Displacement repair for past tense AUX.

- (65) *v*-Noninitiality
 Terminal *v* cannot be leftmost within T^{0Max} .
 (Cf. Arregi & Nevins, 2012, p. 268)

- (66) *v*-Noninitiality constraint + repair
 a. The structural description is T with [past], [modal], or [conditional] features, a 1st or 2nd ERG clitic, and no ABS clitic (i.e., the ABS argument is 3rd Person)
 b. The structural change is the movement of the ERG clitic to the left of *v*+Asp, via GR

The application of this constraint is demonstrated with a ditransitive in (67). Note that the AFFIX constraint + repair sequence occurs before *v*PEN. Although this first moves the ERG clitic further from its ultimate destination, this constraint ranking is necessary for the DAT argument to vacate the first position that the ERG clitic will eventually occupy.

- (67) a. Ditransitive, past-tense structure



- b. Linearization

$Cl_{DAT} - v+Asp - Cl_{ERG} - T_{PAST}$

c. AFFIX violation + repair #1 (ERG)

$$\begin{aligned} & Cl_{DAT} - v+Asp - Cl_{ERG} - T_{PAST} \rightarrow \\ & Cl_{DAT} - v+Asp - [Cl_{ERG}] \{ T_{PAST} \} \rightarrow \\ & Cl_{DAT} - v+Asp - \underline{Cl_{ERG}} - T_{PAST} - Cl_{ERG} - \underline{T_{PAST}} \rightarrow \\ & Cl_{DAT} - v+Asp - T_{PAST} - Cl_{ERG} \end{aligned}$$

d. AFFIX violation + repair #2 (DAT)

$$\begin{aligned} & Cl_{DAT} - v+Asp - T_{PAST} - Cl_{ERG} \rightarrow \\ & [Cl_{DAT}] \{ v+Asp - T_{PAST} \} - Cl_{ERG} \rightarrow \\ & \underline{Cl_{DAT}} - v+Asp - T_{PAST} - Cl_{DAT} - \underline{v+Asp - T_{PAST}} - Cl_{ERG} \rightarrow \\ & v+Asp - T_{PAST} - Cl_{DAT} - Cl_{ERG} \end{aligned}$$

e. v-N violation + repair

$$\begin{aligned} & v+Asp - T_{PAST} - Cl_{DAT} - Cl_{ERG} \rightarrow \\ & [v+Asp - T_{PAST} - Cl_{DAT}] \{ Cl_{ERG} \} \rightarrow \\ & \underline{v+Asp - T_{PAST} - Cl_{DAT}} - Cl_{ERG} - v - T_{PAST} - Cl_{DAT} - \underline{Cl_{ERG}} \rightarrow \\ & Cl_{ERG} - v+Asp - T_{PAST} - Cl_{DAT}^{15} \end{aligned}$$

This section has shown that the phenomenon of Ergative Displacement can be accounted for via GR, with a constraint ordered after both AFFIX and vPEN. The following section discusses another repair for the v-N constraint, which applies when Ergative Displacement is prohibited.

2.5.3 L-Support

The final Linear Operation prior to Vocabulary Insertion is L-support, so named by Arregi & Nevins (2012) for its linearization/left-edge position. This operation accounts for the appearance of the morpheme /d/ in the ABS clitic position in 3rd Person contexts, in which clitics are not generated syntactically. This operation is an alternative repair for the v-N constraint in (65) above, meaning that (66) should be revised as follows.

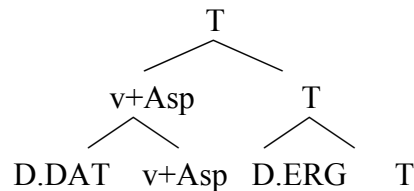
¹⁵ The derivation in (55e) does not show the actual final morpheme order of the past tense ditransitive; as seen in Table 13, the tense marker actually appears to the right of the DAT doubled clitic. This could be accomplished by further refining the application of AFFIX in past vs. present tense contexts, or by introducing another constraint that subsequently moves T. The analysis here does not hinge on this solution.

(68) *v-Noninitiality constraint + repair (version 2)*

- a. The structural description is *v* at the leftmost edge of AUX, with no ABS clitic preceding it
- b. The structural change is context sensitive:
 - i. If T^{0Max} includes T with [past], [modal], or [conditional] features, 1st or 2nd ERG clitic, and no ABS clitic (i.e., the ABS argument is 3rd Person), the structural change is the movement of the ERG clitic to the left of *v(+Asp)*, via GR
 - ii. Otherwise, insert the L-morpheme to the left of *v(+Asp)*

The insertion of the L-morpheme cannot be assessed until this point in the derivation because clitic movement via GR may indeed cause a violation of *v-N* that was unseen earlier; within the Linear Operation module, it must be ordered after the constraints described above. This last-resort repair, and the case for ordering, are demonstrated in (69).

(69) a. Ditransitive, present tense structure



b. Linearization

$Cl_{DAT} - v+Asp - Cl_{ERG} - T$

c. AFFIX violation + repair #1 (ERG)

$Cl_{DAT} - v+Asp - Cl_{ERG} - T \rightarrow$
 $Cl_{DAT} - v+Asp - [Cl_{ERG}] \{ T \} \rightarrow$
 $Cl_{DAT} - v+Asp - \underline{Cl_{ERG}} - T - Cl_{ERG} - \underline{T} \rightarrow$
 $Cl_{DAT} - v+Asp - T - Cl_{ERG}$

d. AFFIX violation + repair #2 (DAT)

$Cl_{DAT} - v+Asp - T - Cl_{ERG} \rightarrow$
 $[Cl_{DAT}] \{ v+Asp - T \} - Cl_{ERG} \rightarrow$
 $\underline{Cl_{DAT}} - v+Asp - T - \underline{Cl_{DAT}} - v+Asp - T - Cl_{ERG} \rightarrow$
 $v+Asp - T - Cl_{DAT} - Cl_{ERG}$

e. v-N violation + repair (L-support)

$$\begin{array}{l} v+\text{Asp} - T - \text{Cl}_{\text{DAT}} - \text{Cl}_{\text{ERG}} \rightarrow \\ L - v+\text{Asp} - T - \text{Cl}_{\text{DAT}} - \text{Cl}_{\text{ERG}} \end{array}$$

This section has introduced the Linear Operation module, which is ordered after Linearization and serves to rearrange morphemes to their surface order, motivated by language-specific constraints. The utility of GR to move these clitics was demonstrated, as was evidence for constraint ordering. The final constraint assessment order is as follows.

(70) Linear Operation constraint assessment

1. AFFIX (moves ERG and DAT clitics to the right of T)
2. v-Peninitality (moves ABS PL clitic to the right of T)
3. v-Noninitality (either moves ERG to right of v, or inserts L-morpheme)

By the end of this module, morphemes are in their surface order position and ready to undergo Vocabulary Insertion, the final step before the structure is sent to PF for any phonological alternations that need occur. Vocabulary Insertion is presented in the following section.

3 Vocabulary Insertion

Vocabulary Insertion is the association of an abstract feature bundle with a phonological output; the element inserted is part of list B, the Vocabulary (Marantz, 1998). Elements of list B are termed Vocabulary Items (VIs). A VI is not an atomic unit but a relationship between a set of features and a phonological output (Harley & Noyer, 1999); the VI does not add any syntactic or semantic information but rather provides a pronunciation for a morpheme already present in the syntactic structure.

Relevant to the process of Vocabulary Insertion is the principle of Underspecification, which refers to the makeup of the feature bundles of a VI. The feature bundles in terminal nodes throughout the syntax (morphemes) do not have a phonological realization; this comes from the VI. Consequently, Vocabulary Insertion requires a correlation between the features of the fully

specified morpheme and those in the VI (that is, the features need to be matched). For a given morpheme, there may be multiple VIs representing subsets of its features. The ‘best match’ is determined by the *Subset Principle*, which states:

The phonological exponent of a Vocabulary Item is inserted into a position if the item matches all or a subset of the features specified in that position. Insertion does not take place if the Vocabulary Item contains features not present in the morpheme. Where several Vocabulary Items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen.

(Halle, 1997, p. 428)

After the ‘best match’ is inserted, the derivation undergoes phonological processes. The remainder of this section discusses the VIs derived for the morphemes in AUX, in accordance with the Subset Principle.

3.1 ABS, ERG, and DAT clitics

This section offers VIs for doubled clitics, shown in Table 13.

Table 13. ABS, ERG, and DAT doubled clitics (modified from Arregi & Nevins, 2012)

	1.S	1.P	2.S	2.P	3.S	3.P
ABS	/n/ ↔ [D, +part, +auth, +sg]/__v	/g/ ↔ [D, +part, +auth, - sg]/__v	/z/ ↔ [D, +part, - auth]/__v			
ERG					/ø/ ↔ [K]	
DAT	/t/ ↔ [+part, +auth, +sg]	/gu/ ↔ [+part, +auth, -sg]	/zu/ ↔ [+part, -auth]		/o/ ↔ [-part, +sg]	/ø/ ↔ [-part, - sg]
	/da/ ↔ [+part, +auth, +sg, DAT?]					

A few observations can be made regarding ABS, ERG, and DAT doubled clitics. First, note that all of the doubled clitics lack a Case feature. The underspecification of Case accounts for the near-the inventory is almost identical between ERG and DAT doubled clitics; this can be accounted for in DM by underspecifying these morphemes for a case feature.

Similarly, the underspecification of an ABS feature accounts for the syncretism between 1st and 2nd Person ABS and ERG clitics in Ergative Displacement contexts (see Table 12).

However, in order to ensure that ABS clitics are not inserted in ERG/DAT terminal nodes and vice versa, the former are specified for context. A detailed discussion of the motivation for context specificity is given in Arregi & Nevins (2012). Context specificity limits the insertion of this VI to the position to the left of T. As an additional specification, this VI will be given priority of insertion over ERG and DAT clitics.

Note that 2nd and 3rd Person clitics are not differentiated by Number; Number is realized as a separate clitic. This VI is shown in (71).

(71) /t)e/ \leftrightarrow [D, -sg]

The plural clitic, created via Plural Fission, contains no Person features, as its realization is the same in 2nd and 3rd Person contexts. Note that it is not used in 1st Person plural contexts; this clitic does not undergo Plural Fission by definition of the rule, and although the plural clitic would match the category and Number features of the 1st Person plural terminal node, more specific VIs are available.

Note that ABS doubled clitics include the category feature D, while ERG and DAT doubled clitics lack a category feature in most cases. This is due to the fact that these doubled clitics were argued not to result from the M-merger of a DP, but rather the M-merger of a DP within a KP (for ERG) or PP (for DAT). The category feature of the clitic is that of the highest of the reduced functional heads; therefore, in order to achieve the syncretism observed between ERG and DAT doubled clitics, they needed to be underspecified for a category feature.

However, category features are invoked when distinguishing 3rd Person ERG clitics (always null) from 3rd Person DAT clitics (realized as /o/ in singular contexts). Recall that DAT arguments were posited to include a [-participant] feature, which correlated with animacy, while there is no animacy restriction on ERG arguments; therefore, this can be the feature based on

which these forms diverge. However, the exclusion of a [participant] feature in the ERG clitic VIs would leave no features for this bundle at all; therefore, 3rd Person ERG clitics are claimed to include their category feature, K.

Finally, VI(s) must be offered to account for the L-morpheme. In my understanding, although Arregi & Nevins (2012) propose the L-morpheme, they do not supply a VI for it. Recall the L-morpheme is inserted in cases where v ultimately occurs at the left periphery of AUX as a repair for a v-N violation. The category of the L-morpheme is unspecified, meaning that the VI lacks a category feature (and presumably category information comes from the syntax, so post-syntactically generated morphemes lack a category feature, unless they copy it from elsewhere like e.g., the plural clitic). The L-morpheme is also sensitive to a number of v- or T-related factors, like Tense and subjunctivity. There is no real natural class of features (e.g., Phi features) that can be appealed to in the L-morpheme VI itself. Thus, it is possible that the form of the L-morpheme is entirely conditioned by context, i.e., by the features of v and T nearby. Estimated VIs for the L-morpheme are shown in Table 14.

Table 14. Possible L-morpheme VIs¹⁶

Form of L-morpheme	Context	Possible VI
d-	present tense	/d/ $\leftarrow \rightarrow$ +v+T[present]
z-	past tense	/z/ $\leftarrow \rightarrow$ +v+T[past]
∅-	past tense	/∅/ $\leftarrow \rightarrow$ +v+T[past]

(context from Trask, 1981, p. 297)

3.2 Anchor of AUX: v

This section turns to VIs for one component of the anchor of AUX, v(+Asp). Recall from the discussion above that Asp does not have any bearing on the form of v, and that the form of v

¹⁶ There are additional, rarer L-morphemes (e.g., /l/, /b/ that surface in ‘contingent’ and 3rd Person imperative contexts. I leave the VIs for these L-morphemes aside here, though presumably they could be handled similarly, by including reference to the relevant grammatical features in the contextual restrictions for the VIs.

is sensitive to Tense information; this is accounted for via context specification in the VIs. These VIs are shown in Table 15 below.

Table 15. VIs for v

	1.S	1.P	2.S	2.P	3.S	3.P
[-have, -appl]	/iz/ ↔ [v, +part, +auth, +sg, -have, -appl] / T[+pres]	/ar/ ↔ [v, +part, -have, -appl] / ____ T[+pres]			/ø/ ↔ [v, +sg] / T[+pres]	/ir/ ↔ [v, -part, -sg, -have, -appl] / T[+pres]
[+have, -appl]	/a/ ↔ [v, +part, +auth, +sg, +have, -appl] / T[+pres]					/ait/ ↔ [v, +part, +have, -appl] / ____ T[+pres]
[+have, +appl]				/izk/ ↔ [v, -part, -sg, +have, +appl] / T[+present]		
[-have, +appl]	tzai ↔ [v, +sg, -have, +appl] / ____ T[+pres]	tzaizki ↔ [v, -sg, -have, +appl] / ____ T[+pres]	tzai ↔ [v, +sg, -have, +appl] / ____ T[+pres]	tzaizki ↔ [v, -sg, -have, +appl] / ____ T[+pres]	tzai ↔ [v, +sg, -have, +appl] / ____ T[+pres]	tzaizki ↔ [v, -sg, -have, +appl] / ____ T[+pres]

As seen in Table 15, specificity and context both play a role in the derivation of the VIs for v in various contexts. Note that all of the VIs are of the category v, and are specified [±have], [±appl], due to the insertion of these features. Further, they are all underspecified for an Asp feature. The combination of [±have], [±appl] accounts for the change in form in (canonically) intransitive, transitive, ditransitive, and applicative intransitive contexts, though recall that these forms are more accurately predicted by the presence/absence of the ERG/DAT clitics that condition the insertion of these features. Additionally, note that commonalities across the paradigm are accounted for via underspecification. For example, 2nd and 1st Person plural AUX share a VI; this is accounted for by leaving the [author] feature that distinguished 1st from 2nd Person out. To allow both 2nd Person singular and plural agreement, the [singular] feature is also

left out. In order to make sure that this VI is not used in 1st Person plural contexts, [author] and [singular] are both specified for that form.

Considering the process of VI competition, recall that the VI with the most matching features will be inserted. This means the [+participant] only VIs will not be competition for the correct 1st Person VI. Turning to 3rd Person plural VIs, at first glance it would seem unnecessary for [-participant] to be specified; however, in order to avoid an unwinnable competition between 2nd/1st Person Plural VIs and 3rd Person plural VIs in the case of 1st/2nd Person plural forms, another feature must be added to the 3rd Person plural VI to rule it out. I assume that [-participant] is the 3rd Person default feature given to v when it fails to Agree-Link/Copy the Person feature of the ABS argument. The competition requiring the inclusion of this feature is demonstrated in (72).

(72) Competing VIs

- a. Feature content of terminal node for 1st/2nd Person Plural (fully specified):
[v, +participant, +author, -singular, +have, +appl]
- b. **Candidate 1:** [v, +part, +have, +appl] / _____ T[+present]
- c. **Candidate 2:** [v, -singular, +have, +appl] / _____ T[+present]

What (72) shows is that, unless Candidate 2 (the 3rd Person Plural VI) is not specified as [-participant], it is just as eligible for insertion into the v terminal node in 1st/2nd Person plural contexts. In order to rule out this form, [-participant] is specified. However, this is not an issue in the case of 1st/2nd Person singular vs. 3rd Person singular contexts, because the VIs for the former are far more specified and therefore no competition arises.

Finally, note that there is reference in these VIs to their context of insertion, as proposed by Arregi & Nevins (2012). Specifically, these VIs are specified for insertion in the context of a T morpheme that includes a [+present] Tense feature, to account for the fact that the form of v (and T) varies based on this feature.

3.3 Anchor of AUX: T

Table 16 shows the VIs for the forms of T.

Table 16. VIs for T

Intransitive	/a/ \leftrightarrow [T, +present] / [v, -have, -appl]
Transitive	/u/ \leftrightarrow [T, +present] / [v, +have, -appl]
Ditransitive	/i/ \leftrightarrow [T, +present] / [v, +have, +appl]
Appl. Intransitive	/ø/ \leftrightarrow [T, +present] / [v, -have, +appl]

As the VIs for v rely in the featural content of T for their selection, so do the VIs for T rely on v. The [+have], [+appl] features that denote clitic context of v also play a role in determining the T VI to be inserted, since the featural content does not otherwise differ. This section has concluded the entire post-syntactic derivation of AUX, through Vocabulary Insertion.

4 Conclusion

This section has given a morphological analysis for the AUX forms discussed in preceding chapters. Following Arregi & Nevins (2012), a modular system to post-syntactic operations was introduced. This section innovated a module-internal procedure by which structures were scanned and repairs were enacted, motivated by language-specific statements and constraints. Individual operations were demonstrated, and adapted from Arregi & Nevins (2012) where necessary to account for the difference between the Batua dialect under investigation here and the Biscayan dialects that they analyze. Finally, VIs for all AUX morphemes were offered, with reference made to specificity and context that ensures the insertion of the proper form in the proper context, in line with the Subset Principle.

The contribution of this section is the introduction of the scanning procedure described in Section 2. The theoretical motivation for this proposal was the absence of a uniform approach to the presentation of language-specific constraints and the operations that they motivate within the DM framework. Formalizing the presentation of these statements/rules offers the opportunity to

clearly see how different languages and dialects formulate constraints, and how the same repairs can be used to adhere to different well-formedness conditions. Going forward, implementing this procedure in the analysis of different languages and dialects will help bring independent results in line, aiding in building an inventory of DM operations that can be considered more or less universally available.

CHAPTER 6: Implications for Second Language Acquisition Research

The previous chapters have focused strictly on the derivation of the Basque auxiliary (AUX), covering Case assignment, Agree(-Link/Copy) relations, clitic doubling, and post-syntactic operations. This chapter shifts focus to the use of the AUX, specifically by second language (L2) learners of Basque. Although AUX is a high-frequency lexical item (obligatory in most sentences), its structure has proven to be quite intricate, involving the interaction of numerous syntactic relations and morphological operations. This complexity raises a question: can non-native speakers of Basque ever truly attain a native-like competence (i.e., production and interpretation) of AUX?

From a broad perspective, theoretical analyses have long been tied to questions of learnability: “What is the system of knowledge incorporated into the mind/brain of a person who speaks and understands a particular language? What constitutes the language that the person has mastered and knows?” (Chomsky, 1992, p. 9). Description of this system of knowledge—a generative grammar—is a challenge to describe, even for a first language (L1). What goes into an L2 grammar is even more complicated; unlike L1 learners, who eventually converge on a (relatively) shared representation of their language, the end state for L2 learners covers a broad range of possible outcomes. Further, the outcome for even highly proficient L2 learners often diverges from the behaviors seen from native speakers.

Thus, generative approaches to second language acquisition (SLA) seek to determine the underlying representation(s) reached by L2 learners, and how L2 competence is influenced by the L1. While a broad inventory of grammatical options are available to L1 learners, the unique and often non-native-like representations of L2 learners lead some researchers (Hawkins & Chan, 1997; Tsimpli & Dimitrakopoulou, 2007) to suggest that there are limitations on the

inventory available to this population. This raises questions about the grammatical structures, relationships, and objects that are ultimately acquirable. This chapter and the next focus on the possibilities for the acquisition of AUX by adult L2 Basque speakers. Although AUX constitutes but a small part of the linguistic competence that L2 learners are developing, the analyses of the previous chapters have shown that it is a highly complex item, and one with which learners may particularly struggle, for reasons described below. The overall purpose of this investigation is to determine if L2 learners can ultimately acquire AUX, producing and interpreting it at a native-like level, and if not, what specific issues seem to arise in its use. L2 learner challenges with AUX will contribute to our understanding of what may or may not be possible for L2 learners to acquire.

Many SLA studies have found that learners struggle to master inflectional morphology, or morphology related to grammatical features, e.g., tense, definiteness, C/case, and Phi-features (e.g., Hopp, 2009; Lardiere, 2007, 2008; McCarthy, 2008; White, 2003, among others). This often leads to intrapersonal variation not seen in native speakers. The Basque AUX is a particularly fertile ground for investigating these issues: the possible combinations of clitics and AUX inflection yield over 90 possible forms in the present tense alone, the syntactic relations underlying these forms are many, the language's case alignment is of the rarer ergative (ERG)-absolutive (ABS) type, and the Person Case Constraint (PCC) requires specific feature combinations on certain arguments. Thus, this chapter discusses the challenges that AUX presents to L2 learners, and forms hypotheses about their expected behavior during the acquisition process. This serves as the background for a pilot experiment (Chapter 7) that compares L1 Spanish-L2 Basque learners' production and interpretation of AUX as proficiency increases, from a generativist perspective. Given that AUX in Basque is syntactically

complicated and morphologically dense, it is hypothesized that L2 Basque learners will face numerous challenges in learning and producing AUX. The research questions for the pilot experiment are detailed in (1).

- (1) *AUX acquisition research questions*
- a. Can L2 learners of Basque ultimately acquire the many complex forms of the present perfect AUX?
 - i. How does increasing proficiency correlate with the use of AUX?
 - ii. What is the influence of age and context of acquisition?
 - b. What aspects of the structure of AUX impact its acquisition?
 - i. Does a morpheme's status as a clitic (i.e., ERG, DAT or ABS doubled clitics) vs. agreement marker (i.e., v with ABS features Agree-Copied) play a role?
 - ii. What is the relationship between case morphology and the acquisition of AUX?

The questions in (1) approach the acquisition (i.e., native-like production and interpretation) of AUX in two ways: (1a) looks at the possibility of ultimate attainment, with special focus on the role of age of acquisition (AoA) and context of acquisition; (1b) questions what specific characteristics of AUX might prove most troublesome to learners.

These research questions—the role of increasing proficiency and learners' abilities with various AUX-related morphosyntactic objects—have not been directly addressed for Basque in the SLA literature. However, a considerable amount of work has been done that offers context for the present experiment. This research has focused on the processing of Basque, by native speakers (Carreiras, et al., 2010; Díaz, et al., 2011; Erdocia, et al., 2009; Santesteban & Costa, 2006; Santesteban, Pickering, & Branigan, 2013; Zawiszewski & Friederici, 2009) and early-acquiring, high proficiency L1 Spanish-L2 Basque learners (de la Cruz-Pavía, et al., 2014; Erdocia, Zawiszewski, & Laka, 2014; Zawiszewski, et al., 2011). These experiments report on both behavioral and ERP data, offering insight into the brain activity that comes along with processing e.g., different word orders, case marking violations, agreement violations, or

ambiguities. Many of these issues relate to AUX, and can inform the current research in terms of what can be (broadly) expected from high proficiency and control participants. Additionally, some of the experimental paradigms (Zawiszewski & Friederici, 2009) used can be adapted to the present research, offering a vetted experiment design and test battery.

However, the studies cited above do not include participants who began acquiring Basque in adulthood; the present study aims to show a change in learner behavior as proficiency increases, which may offer insight into the process by which the underlying representation of AUX progresses. Additionally, the results of these studies are not analyzed for the type of underlying syntactic relations currently under investigation. Rather, these results speak more broadly to parameters (headedness, case alignment, type of verb agreement, cf. Laka, Santesteban, Erdocia, & Zawiszewski, 2012, Zawiszewski et al., 2011). In addition to the language processing work, there is one recent generativist SLA study investigating the acquisition of ergativity and AUX selection by L2 Basque learners (Rodríguez-Ordóñez, to appear).

Further, there is research on children acquiring Basque as their only L1, as an L1 simultaneously with Spanish (a second first language, or 2L1), or as an L2 in early childhood (cL2). Some of these studies (Austin, 2007, 2012; Ezeizabarrena, 2012; Meisel & Ezeizabarrena, 1996) look directly at the production of case markers and AUX; these results can be compared to those obtained by this pilot experiment to determine the impact of age of acquisition on AUX comprehension and production. Further comparisons can be made between the errors of child and adult learners to discern specific differences in the formation of necessary syntactic relations and morphosyntactic feature bundles.

This chapter proceeds as follows. Section 1 discusses what is meant by ‘the acquisition of AUX’, enumerating the structures and underlying relations that need to be tested. To situate the results of the pilot experiment within the generativist SLA theory, in Section 2, I compare hypotheses about the source of difficulty in the acquisition of L2 morphosyntax, and from these theories derive Basque-specific predictions. In Section 3, I discuss previous work on the acquisition and processing of Basque by native speakers and high proficiency L2 learners (Section 3.1), as well as by children acquiring Basque as an L1, 2L1, or cL2 (Section 3.2). These studies inform expectations about L2 learner behavior. Section 4 looks at L2 acquisition of syntactic structures and relationships pertaining to AUX from a cross-linguistic perspective; this includes clitic doubling (Section 4.1), agreement relations (Section 4.2), and case marking (Section 4.3), and derives more predictions for Basque learners. Section 5 summarizes the expectations for learner behavior to be tested in the pilot experiment in Chapter 7.

1 AUX structures under investigation

The research questions in (1) seek to investigate the “acquisition of AUX”, but given the intricate morphosyntactic analysis of the previous chapters, it is not immediately clear what this entails. Noting that many complex neurological, psychological, cognitive, and grammatical processes together make up ‘acquisition’, the focus here is on the production and interpretation of AUX in experimental conditions. That is, I aim to determine if and when adult L2 learners of Basque perform like native speakers on grammaticality, interpretation, and writing tasks with respect to the use of AUX.

As the previous chapters have shown, the Basque AUX is small but mighty. Its multi-morphemic character offers the chance to isolate individual syntactic relationships and morphological representations to determine what underlying grammatical factors may be most

significant to learners: either posing a challenge or somehow aiding in acquisition. To this end, this section presents several possible scenarios for acquisition and reviews the structures that would be involved in each. First, it is possible that learners are highly accurate in both AUX inflection (i.e., v showing ABS agreement features) and doubled clitics; this behavior could be expected of learners of a high proficiency level. Such performance would indicate solid knowledge of the position of the DP in the sentence, the Agree-Link relation(s) into which the DP enters, which of those relations can yield doubled clitics via M-merger, and which undergo Agree-Copy post-syntactically. At lower proficiency, learners could be deficient in both clitic doubling and production of inflectional morphemes on AUX. This would indicate an overall lack of knowledge about Agree-Link and Agree-Copy, or possible difficulty with the M-merger operation. It could also indicate a lack of familiarity with the obligatory nature of AUX itself.

However, more interesting cases would arise if learners showed productive ability with one aspect of AUX but not the other (e.g., productive use of clitics with non-target-like anchor forms, or deficient clitics with target-like AUX inflection). This would indicate that some, but not necessarily all, underlying structural knowledge had been acquired, and was not properly associated with (some) inflectional morphology. For example, correct AUX inflection on the anchor of v might indicate the Agree-Link and Agree-Copy relations with the ABS argument were properly formed, but errors with DAT/ERG clitics would show that Agree-Link was not obtained in all possible cases. Correct AUX inflection coupled with errors with the ABS clitic would show problems arising in the M-merger process. Alternatively, correct clitic usage coupled with incorrect AUX inflection would indicate either an error in the Agree-Link relation between the ABS argument and v, or in Agree-Copy. This kind of error would help determine whether acquisition holdups occur in the morphological or syntactic components. Additionally, if

learner behaviors do follow along lines delineated by the underlying morphosyntactic analysis, this could offer evidence for the validity of those structures. For example, issues with ABS, ERG, and DAT clitics – but not with L-morphemes – might suggest that the theory correctly makes a distinction between these two types of morphosyntactic objects.

However, L2 learners' non-target-like production of inflectional morphology does not necessarily indicate the lack of knowledge of the underlying syntactic structure. For example, Lardiere (1998a, 2006) found that her participant, Patty, was consistently deficient in the production of 3rd Person singular agreement morphology on verbs; at first glance, this might suggest a deficient representation of the [+finite] feature on T°. However, Patty's use of case-marked pronouns was perfect. Lardiere analyzes nominative (NOM) case marking as dependent on a [+finite] feature, which suggests that this feature is present for Patty despite its lack of representation in the verbal morphology. Lardiere's findings underscore that in order to obtain a complete picture of an L2 learner's grammar, empirical studies cannot be focused solely on the production of inflectional morphology but should also consider the broader morphosyntactic ramifications of the relationships underlying it.

Following Lardiere's observations, it is not sufficient to look merely at learners' suppliance, omission, or substitution of the morphemes of AUX; it will also be necessary to examine their knowledge of other morphosyntactic objects associated with AUX. As AUX includes clitics doubling dative (DAT), ERG, and (some) ABS argument, AUX production requires knowledge of the syntactic position of these arguments, as well as the Agree-Link relations into which they enter in order to generate doubled clitics via M-merger.

To understand participants' knowledge about the arguments doubled by clitics, I will examine learners' productivity in case-marking subject, direct object, and indirect object

arguments. Given the analysis of Case offered in Chapter 3, what can be gleaned from examining these arguments will differ. For example, recall that DAT Case were claimed to be assigned inherently to arguments Merged as a PP complement in Spec, ApplP. If these arguments surface without their obligatory case markers, several interpretations are possible. First, it could be that these arguments are not being Merged in the expected positions; alternatively, it could be an error of omission as full DAT DPs are not case-marked in the L1 (Spanish). To test this possibility, (lack of) case marking would have to be viewed in tandem with doubled clitics; if case marking is lacking but doubled clitics are produced, it would suggest the proper underlying syntactic configuration and indicate that the production of case morphology is the issue. Conversely, if case marking is produced properly but doubled clitics are not, this would suggest that the issue is not necessarily morphological, but rather stems from establishing Agree-Link or initiating M-merger.

Production of case marking will demonstrate knowledge of the syntactic position of these arguments, as well as the relationship between DPs in these positions and surrounding functional projections (e.g., Agree-Link with T or v). Taken together with the production of doubled clitics, a more complete L2 representation of AUX becomes available.

2 Theories of L2 acquisition of inflectional morphology and their predictions

The previous section offered justification for considering learners' use of AUX inflection, doubled clitics, and DP case marking. Some possible outcomes were explained in terms of underlying syntactic relationships and morphological knowledge. In this section, I refine predictions for learners' use of AUX, in light of generativist SLA theories that point to possible sources for morphological and syntactic challenges. Section 2.1 introduces such theories, and Section 2.2 derives specific predictions for patterns of AUX acquisition.

2.1 Theories of L2 acquisition

It is debated whether the crux of the challenge for L2 learners lies in the syntactic or the morphological domain. Looking first at theories that consider (lack of) access to and use of syntactic features to be a primary source of non-native-likeness (so-called Representational Deficit theories), consider the Failed Functional Features (FFF) Hypothesis (Hawkins & Chan, 1997). According to the FFF, L1 acquisition involves the selection of functional categories from a universal inventory, and the association of morphophonology with those categories and the functional features they include. L2 learners, however, are claimed to no longer have access to the universal functional feature inventory. Thus, L2 learners can transfer functional features from the L1 to be associated with L2 morphophonology, but cannot acquire functional features of the L2 that do not appear in the L1. In this view, morphological production is constrained by learners' access to syntactic functional features.

Another theory that looks at constraints on syntactic knowledge is the Interpretability Hypothesis (IH) (Tsimpili & Dimitrakpoulou, 2007; Tsimpili & Mastropavlou, 2007). This hypothesis is also based on the (un)availability of syntactic features, which in the Minimalist framework are either interpretable or uninterpretable. The claim is that any uninterpretable features *not* in the L1 are inaccessible to L2 learners; thus, constructions with new features that are uninterpretable at LF are problematic. By contrast, interpretable features are accessible to L2 learners as they have a conceptual representation (that is, a semantic meaning in addition to a syntactic function), and so can be acquired.

In their discussion of the IH, Hawkins & Hattori (2006) further clarify some of the implications of this theory. There are two issues of particular interest for the present experiment: first, the role that age of acquisition (AoA) plays in learners' ability to acquire new

uninterpretable features; second, Hawkins & Hattori notice that many highly advanced speakers do perform with nativelike accuracy in some regards, which is not predicted by the IH and therefore requires an alternative explanation.

Regarding the role of AoA, Hawkins & Hattori emphasize that the IH is tied to the Critical Period Hypothesis (Lenneberg, 1967), which suggests that there is a cut-off point (around puberty) after which it becomes more challenging to learn another language. With regard to the IH, the claim is that the acquisition of uninterpretable features is subject to a critical period, after which new uninterpretable features cannot be acquired at all. As a ‘closed class’ of items, Hawkins & Hattori suggest that this may be due to constraints of functional economy, or possibly have neuro-anatomical motivations. Interpretable features are an ‘open class’, on the other hand, and so are still available post-critical period because they can be associated with new, concrete concepts. This point is important for the present study, as one group of participants in the pilot experiment report learning Basque in early childhood, between the ages of 2-6. As this is well within the critical period, these participants should have the same access to uninterpretable features as native speakers who learned Basque from birth, and should be contrastable with advanced L2 speakers who acquired Basque after puberty.

Turning to the performance of advanced L2 learners, Hawkins & Hattori note that this population can and often does perform at a nativelike level on some (but not all) experimental tasks. This is not predicted by the IH, which claims learners will simply be unable to use L2 uninterpretable features that cannot be transferred from the L1. They claim that these effects can be explained by attributing the behavior to the work an uninterpretable feature that can be transferred from the L1 and which achieves the same result as the missing feature – in some tasks. For example, they explain advanced L1 Japanese-L2 English learners’ ability to move

some WH words (which remain *in situ* in the L1) despite the lack of an uninterpretable feature ([uWH*:]) that Moves WH words, to the use of an uninterpretable ([uFoc*:]) feature that Moves DPs for Focus in Japanese. For the present study, then the IH would attempt to explain nativelike behavior observed in L2 advanced learners in terms of uninterpretable features that can be transferred from the L1, Spanish. For example, for Case, this would predict that accuracy in object Case marking would be due to the transference of ACC Case assignment strategies to ABS DPs.

An alternative view of the challenge of L2 acquisition of morphosyntax claims that non-target-like use of inflectional morphology is not necessarily evidence of a lapse in syntactic knowledge. Two such approaches, the Missing Surface Inflection Hypothesis (MSIH) (Prévost & White, 2000) and the Morphological Underspecification Hypothesis (MUH) (McCarthy, 2007, 2008), propose that learners will make surface-level substitutions. Specifically, these will be errors of overgeneralization. The MSIH, discussing Tense, suggests that nonfinite forms will appear in finite contexts, as the distribution of finite forms is more tightly constrained. Turning to Phi features, the MUH predicts the substitution of a less-marked default, where the L2 requires a more marked or more specific VI; for example, 3rd Person forms would be expected to appear in 2nd Person contexts.¹ What is not clear from McCarthy's (2008) presentation of the MUH is how the default forms should be established. She claims that learners will acquire these forms based on the input they receive; for example, she suggests learners of L2 Spanish will determine that the default gender marking is masculine by noticing that, when in mixed-gender

¹ Interestingly, the MSIH does not support the claim of the MUH. As the MSIH is predicated on an accurate underlying syntactic representation, agreement is expected to be unproblematic for learners. In the case of 3rd Person substitution for 2nd Person, however, it would not be clear whether substitution would in fact occur, per the MUH, or it was being omitted, per the MSIH. Thus, there is overlap between the expected outcomes of these two theories.

groups, the masculine form is applied, while the feminine gender can only be used to refer to groups of all feminine NPs. However, the featural underspecification schemas that she includes are those put forth by Harley & Ritter (2002), which are based on a universal feature geometry. The cross-linguistic applicability of Harley & Ritter's feature model suggests that default feature values need not be learned in an L2 from the input, but are already universally available to learners. McCarthy does not clarify whether she ultimately feels that the defaults need to be independently established based on L2 input, or whether they are universal defaults. The application of the MUH in the present work adopts the latter view, following Harley & Ritter: default feature values are already available to learners, and thus the establishment of default feature values is not contingent upon having noticed specific patterns in the input.

Assuming the universality of default feature values, if taken together, theories like the MUH and the MSIH predict variable performance, with errors generally resulting from the establishment and overgeneralization of a default morphological form.

Another theory that attributes the challenge of inflectional morphology to difficulties building a morphological representation of the L2 is the Feature Reassembly Hypothesis (FRH) (Lardiere, 2008, 2009). The FRH characterizes the L2 acquisition task as involving the reconfiguration of grammatical features from their grouping in lexical items in the L1 to the grouping observed in the target grammar. A phonological representation must be associated with these (sets of) morphological features along with their contexts of appropriate usage, their obligatoriness or optionality, and an understanding of the other feature sets with which they co-occur (for example, a NOM case-marked subject will occur with a finite main verb). In terms of Distributed Morphology (DM), this task is the establishment of VIs for an L2, and their association with appropriate terminal nodes.

Integral to the FRH is the Full Access/Full Transfer hypothesis (Schwartz & Sprouse, 1996), which proposes that the ‘initial state’ from which a learner builds her L2 morphological competence is, in fact, the morphological competence of the L1. Full Transfer implies that the learner brings both the inventory of functional syntactic categories and fully assembled feature bundles to the second language. Unlike the Representational Deficit approaches, Full Access suggests that features, functional categories, etc., that do not appear in the L1 are ultimately acquirable in the L2. Although the FRH is not a predictive theory, per se, it does allow the flexibility to analyze a number of possible learning outcomes, especially when syntactic knowledge is demonstrated in some regards but not others.

2.2 Predictions for acquisition of AUX

Representational Deficit hypotheses (e.g., FFF and IH) interpret challenges with inflectional morphology production as challenges with underlying syntactic representations, due to the differences in functional features and categories in the L1 versus the L2. However, the FRH claims that syntactic representations are not necessarily the issue for learners; rather, they face problems somewhere in the process of assembling new morphological feature bundles, assigning these morphemes a phonological representation, and determining if their context for insertion is obligatory or optional in the L2. Another theory in this camp, the MUH, suggests that when new feature bundles are not correctly assembled/inserted, feature bundles with default features will be substituted. This section makes predictions for the acquisition of AUX by L2 Basque learners, guided by each of these theories. In Chapter 7, the results of the pilot experiment will be discussed in light of these predictions.

2.2.1 Interpretability Hypothesis

Among Representation Deficit hypotheses, the challenge of the L2 acquisition task is focused on the differences in the syntactic feature inventory of the L1 versus the L2 (e.g., Hawkins & Hattori, 2006; Hawkins & Chan, 1997; Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007). The core assumption is that certain kinds of features of the L2 are not available when establishing new representations, unless they are also present in the L1. Learners can compensate for inaccessible features by expanding the role of feature they *do* have access to, but their overall grammars will be deficient.

Here, I focus on the Interpretability Hypothesis (IH) (Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007), as it makes reference to the interpretability of features as a determining factor of acquirability. The IH posits that all L2 learners should be able to acquire new interpretable features in their L2, whether or not they appear in the L1. In contrast, learners will not be able to acquire those uninterpretable features that do not appear in the L1. Performance of new syntactic operations (e.g., generation of a doubled clitic via M-merger) are not predicted to be a challenge per se; it is the predication of such operations on new uninterpretable features that is expected to cause difficulty.

Turning to specific predictions for Basque, the IH views the acquisition of doubled clitics, AUX anchor inflection, and DP Case markers in terms of the un/interpretable features included in these items in Basque versus the L1. Features associated with doubled clitics include Phi features of the argument being doubled (as well as e.g., animacy features), and the Case feature of the associated argument. The Phi features are interpretable, and so the IH are unproblematic regardless of whether or not the L1 (here, Spanish) contains the same Phi feature inventory as Basque or not. As for the uninterpretable corollaries of these features on e.g., *v*,

these too would be unproblematic if they can be transferred from the L1. For the L1 Spanish-L2 Basque pairing, the IH does not predict difficulty with interpretable or uninterpretable Phi features due to the similar inventories of these languages. The question arises as to whether the Case feature of the doubled clitic would be expected to cause an issue for learners.

The following applies to both doubled clitics and to DP case markers: if the L1 and L2 have the same Case features, transfer should be possible. However, consider the situation of an L2 Basque learner with a NOM-accusative (ACC) L1. Assuming that all Case features on DPs are uninterpretable,² and whether they result from structural or non-structural assignment, the IH predicts that learners would not be able to access the new ERG and ABS case features of Basque. The theory does not indicate whether this would result in errors of suppliance or omission, but it does indicate that both DP case marking and doubled clitics would be subject to vulnerability. If learners perform accurately with both DP case markers and doubled clitics, or treat these elements differently, this would constitute evidence against the IH.

Two further points should be made about the acquisition of new Case features under the IH. First, difficulties would only extend to Cases *not* shared by the L1 and L2. If the Case features are shared, no difficulty is predicted. Thus, while ERG and ABS Case would be problematic for L1 Spanish learners, DAT doubled clitics would not be a problem. Second, according to the IH, it is the syntactic features that matter. The fact that the syncretism between ERG and DAT doubled clitics exists is not predicted to alleviate the burden levied by the new, uninterpretable ERG Case feature in doubled clitics in the syntax.

² This assumption raises a question about the nature of inherent Case features. Structural Case is understood to be assigned via Agree, via the valuation of unvalued, uninterpretable features. I also consider inherent Case features uninterpretable, although unlike structural Case features, they do not enter the derivation unvalued. I proceed assuming that all Case features are uninterpretable, though a difference in learners' abilities with DAT vs. ERG/ABS arguments would call for reconsideration of this assumption under the IH.

Turning to the anchor of AUX, the IH predicts that auxiliary inflection will not be problematic if the uninterpretable features on *v* and T were the same in the L1 and the L2. The Basque Number and Person features could be transferred from Spanish. The IH does not consider the processes by which these features are valued (e.g., via Multiple Agree-Link, default valuation) to play a role.

The features on the anchor that will be new to Basque learners are the morphological features [have] and [appl], inserted on *v* to determine the anchor form based on the surrounding DAT and ERG clitics. Interestingly, the IH does not foresee a problem with these features; although they are not interpretable, i.e., do not have a semantic meaning, they are not uninterpretable in the syntax. These features strictly occur in the morphological domain, and are not present during the syntactic derivation. Thus, they are not predicted to be a challenge for learners, despite being novel features to the L2. Findings that indicate that these features are problematic for learners would give cause for a possible expansion of the notion of what counts as an uninterpretable feature under the IH; alternatively, such findings could be considered counterevidence for this analysis of the difference between AUX anchor forms.

In summary, the IH predicts that the challenge for L1 Spanish-L2 Basque learners will lie in the use of both doubled clitics and DP Case markers. The new uninterpretable ERG and ABS features are predicted to be responsible for this challenge; transferred Case features (i.e., DAT) will be produced and interpreted more accurately. Successful production of ERG and ABS features (on DPs or in doubled clitics), or a different treatment of DP Case marking and doubled clitics, would constitute counterevidence for the IH. Before considering this unequivocal counterevidence, however, it should be determined whether the patterns could be explained by use of uninterpretable features from the L1, Spanish, to Basque per the claim of Hawkins &

Hattori (2006). For example, learners could be using NOM and ACC features for Basque Case marking regardless of the realignment of the Case system. If learners associated ERG Case marking with NOM Case marking, accuracy in simple transitives and in intransitive unergatives could be rather high. Phi features in doubled clitics and the anchor of AUX should be unproblematic, since they are interpretable in clitics and can be transferred from the L1 on the anchor. The novel features [have] and [appl] are not predicted to pose a challenge under the IH, because they are not present in the syntax. Finally, recall that Hawkins & Hattori note that any speaker acquiring Basque before puberty should be able to acquire these uninterpretable case features, regardless of whether the language was learned from birth or later in childhood.

2.2.2 Morphological Hypotheses

There are several theories that claim that the challenge of inflectional morphology is not evidence of problems in the syntactic representation, but in production of surface morphology. The MSIH and the MUH hypothesize that learners will determine a ‘default’ that will then be inserted in more specific morphological contexts (e.g., nonfinite verbs in finite positions (Prévost & White, 2000), or 3rd Person singular pronouns/agreement (McCarthy, 2007, 2008)). The MSIH suggests that agreement with finite AUX should be unproblematic for learners because the underlying syntactic relationships are intact (Prévost & White, 2000, p. 111). Although the MSIH does not address Case directly, I presume that the claim for accuracy in underlying representations hold even in the face of Case realignment, like the one that would have for occur for L1 Spanish speakers learning Basque. However, it is known that agreement can be problematic with finite forms (Lardiere, 1998a); therefore, I focus on the predictions of the MUH.

The MUH (McCarthy, 2007, 2008) posits that learners will establish a ‘default’ form, which will be overgeneralized leading to intrapersonal variation. To determine what constitutes a default form, McCarthy is unclear as to whether these need to be acquired independently based on L2 input, or if they are universally available to learners. Going forward, I take the latter position and rely on a feature dependency model like that proposed by Harley & Ritter (2002). The least-marked (highest) features in the hierarchy will be taken as the default. For Person, the default is 3rd Person; for Number, it is singular. For Basque, this suggests the overgeneralization of 3rd Person singular doubled clitics and anchor agreement. This prediction is independently supported on the current analysis by the fact that these are the least-specified VIs, and therefore morphologically eligible for Vocabulary Insertion (even though they would be ruled out in the target grammar in favor of more specific VIs).

Neither the MUH nor the MSIH approaches Case defaults, however. I suggest that the overgeneralized default Case will be ABS, for several reasons. First, ABS Case has been reported to be overgeneralized by child learners (Austin, 2007). From a more theoretical perspective, ABS Case is highest in the m-case hierarchy (Bobaljik, 2008; Marantz, 2000) and therefore can be assigned more freely than ERG or DAT. Finally, although this analysis has taken a privative view of Case features, analyses that break Case down into a set of binary features (e.g., Calabrese, 2008) would analyze ABS Case as having [-] values for all features involved. Taking this view, as Arregi & Nevins (2012) do, VIs for ABS Case could be completely underspecified for Case features. Based on these factors, I assume that if learners do establish a default Case, either for DP marking or for doubled clitics, it would be ABS Case.³ In

³ It will be difficult to determine if DPs marked /ø/ are, indeed, overgeneralization of the ABS marker or a simple lack of suppliance of a required Case marker. Direct evidence could be taken in demonstrative pronouns (Austin, 2007), or from AUX.

sum, evidence for the MUH would come from use of default 3rd Person singular ABS clitics, Case markers, and anchor agreement.

However, it is possible that learners could show variable syntactic performance, constituting counterevidence to the IH, and still not produce default forms as predicted by the MUH. I argue that such outcomes could be explained as a morphological deficit, if the FRH is adopted (Lardiere, 2008, 2009). Recall that the FRH posits that learners establish new feature bundles for vocabulary items in their L2, as well new contexts for the obligatory or optional use of these items. For the Basque AUX, this would include feature bundles for doubled clitics and the anchor morphemes *v* and *T* with appropriate inflection, as well as case markers for DPs. Although the FRH does not make specific predictions about the nature of errors that learners will produce, it has the power to explain a number of outcomes.

First, consider what learners need to know on the FRH approach. Regarding AUX, learners would need to know that while *v* is always obligatory, the specific feature bundle to be chosen is sensitive to the presence or absence of ERG and DAT clitics (manifested in the features [have] and [appl]); similarly, *T* is sensitive to the choice of *v*. Regarding doubled clitics, learners need to make the generalization that clitics on AUX obligatorily double ERG and DAT arguments, subject to some exceptions, e.g., the Person-Match constraint, or ERG Promotion. However, the pattern does not extend to all ABS arguments due to the lack of 3rd Person ABS clitics. Regarding case morphology on DPs, ERG-ABS case alignment means that learners with a NOM-ACC L1 must determine new conditions for what argument gets what marking; no longer is one case obligatory for subjects, another for direct objects.

Consider now the scenarios proposed in Section 1 in terms of the FRH. For AUX, these included: i) target-like performance; ii) errors in both anchor inflection and doubled clitics; iii)

errors in anchor inflection only; iv) errors in doubled clitics only. Situation (i) would not offer any insight into whether or not the FRH correctly conceives of the acquisition task. In (ii), the FRH would predict that this breakdown was caused by learners' inability to formulate and correctly place doubled clitics and AUX anchor morphemes. Depending on the types of errors found (e.g., omission, suppliance of the wrong morpheme), analysis in terms of the FRH would offer the flexibility to target specific features that possibly created a hang-up. As described above, issues could result from the inability to properly form feature bundles or by not properly understanding the context(s) in which they appear. The sheer volume of things that could go wrong when producing the AUX anchor and doubled clitics makes it difficult to generate more specific predictions, but the FRH offers a way to talk about morphological features, their L2 configuration, and the morphological conditions that inform their appearance; this is appealing for such a morphosyntactically complex structure.

A feature-based analysis of scenarios (iii) and (iv) would also depend on the nature of the errors that participants made. However, if errors were seen in AUX inflection but not in doubled clitic use as in (iii), the FRH would point out that the anchor morphemes include new [have] and [appl] features, proposed to condition v selection. On this theory, the inclusion of these L2-specific features might be a source of difficulty for learners. Alternatively, if errors were seen with clitics but not AUX inflection as in (iv), omission of clitics would indicate a misunderstanding of their obligatory context, while use of the wrong clitic would suggest inappropriate feature bundle assembly. Again, a precise FRH analysis would depend on the specific types of errors learners made: errors of omission or substitution, and if substitution, what appeared in the place of the target morpheme.

Turning to DP case marking, an error of omission would suggest that context of use is an issue for learners (especially if case is not overtly marked in the L1). This would not necessarily be evidence of either a lack of access to case features or deficiency in syntactic representation, if accompanied by the proper use of the correlating doubled clitic in AUX. If the error in case marking were one of substitution, this could be interpreted one of two ways. From a context perspective, it is possible that the mismarked DP appears in the wrong morphological position, and received the correct marking for the position in which it appears. Alternatively, this might suggest that the learner is experiencing difficulty in the establishment of the feature bundle associated with that case marker. However, with proper production of AUX this would not necessarily indicate that the case features in question are a roadblock for L2 learners.

In sum, while the FRH does not offer specific predictions about the types of errors to be expected during the acquisition process, the two tasks (feature bundle assembly, determination of context) offer flexibility to account for errors of omission and substitution that could not be accounted for on a syntactic view (IH) or a more predictive morphological hypothesis (MUH).

This section has reviewed theories that reflect on the challenges of syntax and morphology for L2 learners and discussed some predictions for L2 Basque AUX acquisition from each.⁴ Those that consider syntax to be the primary source of difficulty include the FFF (Hawkins & Chan, 1997) and the IH (Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007). The IH predicts that Case will be the primary obstacle to native-like AUX use and DP case marking, due to new uninterpretable features. Alternatively, the MUH

⁴ The role of frequency in L2 acquisition should be considered in addition to these theories. If it is the case that what is hypothesized to be a “challenging” form based on its syntactic or morphological structure is a highly frequent form, it is possible that learners will use the form correctly despite predictions to the contrary. Thus, the materials used in this experiment will need to look beyond the simple production of forms and look at learners’ knowledge of the ramifications of these structures elsewhere in the grammar.

(McCarthy, 2007, 2008) predicts overgeneralization of 3rd Person singular ABS marking on DPs, doubled clitics, and in AUX inflection. Finally, if neither of these predictions is realized, the FRH (Lardiere 2008, 2009) was shown to be adept at analyzing several possible scenarios and can be used in the analysis of real learners' data. These theories offer a broad perspective of the language acquisition task. The remaining sections discuss previous work on Basque and a cross-linguistic view of the specific structures learners must use in AUX formation.

3 Findings from Basque: Processing and acquisition

In addition to holding the analysis of AUX in the previous chapters up to the scrutiny of learnability, another contribution of this pilot experiment is to add to the growing research on L2 acquisition of Basque by adult learners. To date, acquisition studies pertaining to Basque have focused on the processing abilities of high proficiency, early acquiring L1 Spanish-L2 Basque learners (e.g., Erdocia et al., 2014; Zawiszewski et al., 2011), and have investigated the L3 acquisition of English by bilingual Basque-Spanish speakers (Agirre & Mayo, 2014; García Mayo, 2006). Additionally, several studies have explored the acquisition of Basque by children as either an L1 or an L2. The current study will add to this literature by reporting on adult L1 Spanish-L2 Basque learners of varying proficiency levels. The tasks will gather information about learners' abilities to produce and interpret AUX, and how this changes as proficiency increases. Further, the tasks will seek to identify the individual features or structures that prove particularly difficult for learners, offering evidence for the possibility of transference from L1 versus acquisition of new features, feature configurations, syntactic structures, or syntactic relationships.

In Section 3.1, I review how native speakers and very advanced learners process certain aspects of Basque, and thus what might be expected in terms of learner behavior at other

proficiency levels. Section 3.2 presents findings from Basque studies pertaining to the acquisition of case, both as marked on DPs and as represented through ABS, ERG, and DAT morphemes on AUX by children acquiring Basque as their L1 or L2. Although children's results are unlikely to be replicated, possible patterns of acquisition will be noted for later comparison with adult learner behavior.

3.1 Basque processing by native and near-native speakers

A growing body of work exists on the processing of the Basque language, both by native speakers and highly proficient, early-acquiring, non-native speakers. One goal of this research program is to add to the understanding of how language is processed. To date, many conclusions about language processing are based on a small number of languages (e.g., English, German, Japanese). While there is some typological diversity there, Basque offers a wealth of unique characteristics that must be considered when seeking to determine universal processing mechanisms. Additionally, as this dissertation and the literature reviewed herein has shown so far, Basque also is a rich ground for improving notions of theoretical universals of grammar.

Laka et al. (2012) summarize the Basque processing research agenda as follows:

In Linguistic Theory, a significant expansion of the language pool investigated, and systematic cross-linguistic inquiry was crucial to uncover the interplay between universal and variable aspects of the language faculty (Chomsky, 1981; Greenberg, 1963). Research on language representation and processing in the brain must similarly also engage in cross-linguistic studies, so that we can differentiate language-particular effects from universal, invariant properties of language processing by the brain, and thus properly understand the interplay between the two. In order to achieve this goal, it is necessary...to study bilinguals whose language have opposite parametric specifications...like Basque-Spanish bilinguals do.

In order to achieve this goal, the processing patterns of native speakers first must be determined, and then learner behavior can be assessed. This section reviews language processing studies of both participant groups; although the acquisition research pursued in this pilot experiment is

behavioral and not processing-oriented, expected learner behaviors must be considered in terms of what is already known about what the brain finds relatively ‘easy’ and ‘difficult’.⁵

3.1.1 Native speaker processing

Looking first at native speakers, the processing of several structures has been explored. These include the impact of word order, subject vs. object DPs, ERG case, subject and object agreement with AUX, and morphosyntactic ambiguity; the findings for each will be addressed in turn.

Recall that Basque has flexible word order; all of the following sentences are acceptable.

- (2)
- | | | |
|----|--|-------|
| a. | emakume-a-k gizon-a ikusi du guar | (SOV) |
| | woman-the-ERG man-the.ABS seen has today | |
| | ‘The woman has seen the man today’ | |
| b. | gizona ikusi du guar emakumeak | (OVS) |
| c. | gizona ikusi du emakumeak guar | |
| d. | guar ikusi du emakumeak gizona | (VSO) |
| e. | guar ikusi du gizona emakumeak | (VOS) |
| f. | emakumeak ikusi du gizona guar | (SVO) |
| g. | emakumeak ikusi du guar gizona | |
| h. | gizona emakumeak ikusi du guar | (OSV) |
| i. | gizona guar emakumeak ikusi du | |
| j. | guar gizona emakumeak ikusi du | |
| k. | ikusi du emakumeak gizona guar | (VSO) |

(Erdocia, et al., 2009, p. 3:(#1))

⁵ Additionally, the study here will benefit from reviewing experimental design of previous work.

Erdocia et al. (2009) studied the impact of word order of processing of native Basque speakers by having participants read sentences in either canonical Subject-Object-Verb (SOV) or free Object-Subject-Verb (OSV) word order and answer comprehension questions based on what they read. SOV processing was determined to be easier for native speakers, requiring less reading time and with fewer comprehension errors than OSV sentences. Interestingly, in both conditions, subjects required more reading time than objects. Both of these findings were corroborated by Event Related Potential (ERP) data.

The claim that SOV sentences are easier for native speakers to process was substantiated by Zawiszewski & Friederici (2009), who found that native speakers had more grammaticality judgment errors with grammatical OSV sentences than with either grammatical SOV sentences, or ungrammatical sentences of either word order. Additionally, Santesteban et al. (2013) found that native speakers' oral production of AUX was more accurate when producing prompted SOV sentences than OSV sentences, findings which were replicated even when a working memory task was added to the AUX production task. Taken together, the findings of these three studies show that, while SOV and OSV word orders are both possible in Basque, SOV word orders require fewer processing resources and yield more accurate interpretation and production than non-canonical OSV word orders.

Turning to agreement, recall that Basque AUX agrees with (i.e., includes clitic doubling of) both subjects and objects, as seen in (3).

- (3) Zu-k **ni** ikusi **n-au-zu**
 You-ERG me.**ABS** seen **1S.ABS-be.1S-2S.ERG**
 'You have seen me'

The findings for native-speaker processing of agreement show that subject and object agreement do seem to be different processes, but not all the time. Interestingly, the nature of the agreement

violation being processed plays a role. Zawiszewski & Friederici (2009) had native speakers judge Basque sentences as correct or incorrect. These monoclausal transitive sentences were in four groups: grammatical subject-verb (SV) agreement, ungrammatical SV agreement, grammatical object-verb (OV) agreement, and ungrammatical OV agreement.⁶ Behaviorally, more judgment errors were found in the ungrammatical conditions, but there was no discernable difference between SV and OV agreement. Looking at ERP data, however, a stronger response to SV agreement violations was found, leading to the conclusion that SV and OV agreement are different processes in the brain.⁷ This finding was replicated when focusing on OV agreement (both grammatical and ungrammatical) in SOV and OSV word order contexts.

The ERP findings of Zawiszewski & Friederici show that although behavior would indicate no difference between SV and OV agreement processing, these relations are handled in different ways in the brain. However, these findings were not replicated by Díaz et al. (2011); in this experiment, both the behavior and ERP data for both SV and OV agreement violations were

⁶ The use of the terms SV and OV do depart from the characterization of these relationships previously given throughout this dissertation, i.e., ERG doubled clitics, ABS doubled clitics, and ABS agreement. However, to avoid unintentionally misrepresenting the position of the original authors regarding the theoretical nature of these relationships, I discuss these relationships in the same terms that they chose to present their results.

⁷ A question arises when considering these results: is different processing by these groups indicative of different underlying knowledge? Clahsen et al. (2010) note that some researchers consider processing differences to be indicative of different underlying neural structures available to native speakers versus adult learners, though there seems to be some universality in L2 learners' representations that tempers the influence of L1 differences in building these representations. Ullman (2005) suggests that L2 learners and native speakers represent linguistic knowledge in different areas of the brain, with L2 learners relying much more heavily on declarative (i.e., memorized, often explicit) knowledge than the procedural knowledge that native speakers use to apply rules and derive structures. Although Ullman does not rule out the potential of L2 learners to proceduralize linguistic knowledge, the difference in the use of processing resources might suggest that linguistic information is stored differently for L2 learners than for native speakers. For example, for Basque, this might suggest that L2 learners memorize an entire AUX form, while native speakers build AUX up from the underlying Agree operations.

similar. Overall, there was high accuracy on the grammaticality judgment task, and the same ERP effect was found in all conditions. However, the agreement violations in Zawiszewski & Friederici were Person (π) violations (as in (4a-b)); in Díaz et al., the violations were in Number ($\#$) (as in (4c-d)).

- (4) a. Zu-k ni beiko galdu n-au-*te (< nauzu) agian (*SV π)
 You-ERG me.ABS forever lose 1S.ABS-have.1S-*3P.ERG perhaps
 ‘Perhaps you lost me forever’
- b. Zu-k ni asktotan eramaten *d-*u-zu (< nauzu) hondartzara (*OV π)
 You-ERG me.ABS often take *L-*3S.have-2S.ERG beach.to
 ‘You take me often to the beach’

(Zawiszewski & Friederici, 2009, p. 163)

- c. Mikel-en arreb-ek egunkari-a saski-a-n ekarri (*SV $\#$)
 Mikel-GEN sister-ERG.P newspaper-the.ABS.S basket-the-in brought
 d-u-* \emptyset (< dute) kiosko-tik
 L-have.3S-*3S.ERG kiosk-from
 ‘Mikel’s sisters have brought the newspaper in a basket from the kiosk’
- d. Mikel-en arreb-ek egunkari-a-k saski-a-n ekarri (*OV $\#$)
 Mikel-GEN sister-ERG.P newspaper-THE-ABS.P basket-the-in brought
 d-*u-te (< dituzte) kiosko-tik
 L-*have.3S-3P.ERG kiosk-from

(Díaz et al., 2011, p. 363)

This suggests that not all agreement violations are processed the same by native Basque speakers. In the case of Person violations, SV and OV agreement violations register as different processes, while when the Number feature causes the violation, there is no visible difference in SV and OV agreement processing.⁸ A final caveat: in Zawiszewski & Friederici (2009), the stimuli were read by participants, while in Díaz et al. (2011), they were heard. The latter authors

⁸ Returning to the theoretical analysis put forth in this dissertation, the difference in results of these two studies complements the claim that Number and Person agreement are indeed separate processes.

acknowledge that the change in modality might contribute to the divergence from expected results.

Díaz et al. (2011) also examined the processing of ERG Case marking in their experiment. Specifically, some of the sentences that their participants judged as un/grammatical included double ERG marking, as shown in (5).

- (5) Mikel-en arreb-ek egunkari-*ek ...
Mikel-GEN sister-ERG.P newspaper-*ERG.P ...

(Díaz et al., 2011, p. 363)

Native speakers' behavior in judging the (un)grammaticality of these such sentences was found to be largely correct; interestingly, the ERP results for double ERG marking were quite similar to those observed in studies of NOM-ACC Case. This finding was taken as an indication that there may be universal case processing mechanisms available, though this claim requires further substantiation.

Finally, many studies on Basque native speaker processing take advantage of the homophony of the ERG Case marker and the ABS plural morpheme: /-k/, which can lead to an ambiguity of interpretation. In some cases, the ambiguity is not resolvable within the sentence, as in (6), while in other cases the resolution can be assumed based on real-world knowledge, as in (7). Finally, the ambiguity can be temporary and resolved by AUX selection, as shown in (8).

- (6) Gizon-ak emakume-ak ikusi d-itu-ø
Man-the(S/O) woman-the(S/O) seen L-have.3S-3S.ERG
'The man has seen the women' (SOV) or 'The woman has seen the men' (OSV)

(Erdocia et al., 2009, p. 5)

- (7) Ardi-ak osto-ak jan d-itu-ø
sheep-the wolf-the eaten L-have.3S-3S.ERG
'The wolf has eaten the sheep'

(Erdocia et al., 2009, p. 5)

- (8) a. irakasle-ak aipatu ditu-en ikasle-ak lagun-ak ditu
 teacher-P mentioned has-REL student-S friend-P has
 ‘The student [that e mentioned the teachers] has friends’
- b. irakasle-ak aipatu ditu-en ikasle-ak lagun-ak dira
 teacher-S mentioned has-REL student-P friend-P are
 ‘The students [that the teacher mentioned e] are friends’

(Carreiras et al., 2010, p. 82:(#4))

In (6), there are two possible interpretations based on the word order a speaker imposes on the sentences. In (7), the sentence is syntactically ambiguous but it is possible to encourage the OSV word order and disambiguation based on real-world knowledge. In (8), the sentence is ambiguous between a subject relative clause reading and an object relative clause reading until the final AUX disambiguates.

Erdocia et al. (2009) found that when presented with fully ambiguous sentences like (6), native Basque speakers completely ignored the potential for ambiguity and imposed canonical SOV word order on the sentence. This was shown by the speed at which the sentence was read, although some individual elements of the sentence (e.g., AUX) had different reading times than canonical SOV sentences. Note that ambiguous sentences with assumed SOV order were processed much faster than unambiguous OSV sentences, in line with general word order findings. Turning to syntactically ambiguous sentences that were resolvable based on real-world knowledge, Erdocia et al. found more processing resources were required at the verb, the point of disambiguation; although a delay occurred at this point for both SOV and OSV sentences, the non-canonical (OSV) sentences showed a longer reading time at this point than the canonical (SOV) counterparts. This showed that speakers were able to impose a non-canonical word order on a syntactically ambiguous sentence if real-world knowledge encouraged it.

Finally, the disambiguation of subject relative clauses and object relative clauses was studied by Carrerías et al. (2010); as shown in (8), these ambiguities were able to be resolved based on the sentence-final AUX. Their study showed that whether AUX appears in conspicuous sentence-final position, or whether it is followed by another word, speakers had an easier time with object relative clauses than subject relative clauses; this was supported by ERP data. These findings are interesting because they contradict previous studies (from NOM-ACC languages) that found subject relative clauses to require less processing. The results from Carreiras et al. throw doubt on the claim that subject relative clauses are universally easier to process.

The explanation offered for these findings appeals to the ERG-ABS case system of Basque, in which transitive subjects are overtly marked, but intransitive subjects and transitive direct objects are not. Carreiras et al. offer that the tendency observed in previous studies is not an indication of the universal ease of subject relative clause processing, *per se*, but the ease of processing the morphologically unmarked option. In NOM-ACC languages, this would be ease with subject relative clauses, but in Basque would manifest as ease in processing object relative clauses. This hypothesis is discussed further by Laka & Erdocia (2012); they support this claim by pointing out that Erdocia et al. (2009) found subjects required more processing time than objects in transitive sentences despite an overall preference for canonical SOV word order. Viewed in terms of morphological markedness, this finding supports the claim that an unmarked option requires fewer processing resources than its marked counterpart.

In sum, the findings on Basque processing by native speakers have determined that there is a preference for canonical SOV word order over OSV, to the point that SOV order is imposed on fully ambiguous sentences unless real-world knowledge indicates otherwise (Erdocia et al., 2009). Regarding subjects versus objects (tested in transitive contexts), subject-verb agreement

and object-verb agreement may be processed differently when the violation involves the Person feature (Zawiszewski & Friederici, 2009), but not if it is a violation of Number (Díaz et al., 2011). Generally, subject and object DPs are processed differently, with subjects requiring more resources than objects (Carreiras et al., 2010; Erdocia et al., 2009); this is hypothesized to relate to a possible universal tendency for the unmarked option to require fewer processing resources (Carreiras et al., 2010; Laka & Erdocia, 2012). However, violations involving the marked option (e.g., double ERG Case marking) are processed much like case violations in NOM-ACC languages (Díaz et al., 2011). Bearing these trends in mind, I turn to the processing abilities of high-proficiency, early-acquiring⁹ L1 Spanish-L2 Basque speakers.

3.1.2 High-proficiency L1 Spanish-L2 Basque speakers

This section turns to non-native Basque speakers, whose L1 is Spanish. Participants in these studies all report learning Basque from an early age (AoA = approx. 3;00). Their Basque is highly proficient, and they tend to perform as do native speakers in terms of fluency and accuracy. For the remainder of this section, this background will be assumed unless stated otherwise. The purpose of these studies is to determine whether their processing of Basque also approaches that of native speakers.

The studies here focus on the same factors as those investigating native speakers above: word order, verb agreement violations, case, and ambiguity resolution. These research foci are driven by a parameter-based approach to Basque (Laka et al., 2012; Zawiszewski, et al., 2011). Basque differs from Spanish in terms of headedness (Spanish is head-initial, Basque is head-final), and Case alignment (Spanish is NOM-ACC, Basque is ERG-ABS), but both languages

⁹ Age of acquisition (AoA) for all studies is reported to be approximately 3 years old.

require subject-verb agreement. Based on these parametric variations, specific and testable predictions can be made.¹⁰

First, considering the impact of canonical vs. non-canonical word order, recall that native speakers found the SOV easier to process, despite requiring more time to read subject DPs than object DPs (Erdocia et al., 2009). Building on the findings of Erdocia et al. (2009), Erdocia, Zawiszewski, & Laka (2014) tested L1 Spanish-L2 Basque speakers' processing abilities with SOV vs. OSV sentences. They hypothesized that if the L1 lacks the structures of the L2, these structures will be more costly to process despite a high level of proficiency. L2 Basque speakers' behavior was comparable to the native speakers reported in Erdocia et al. (2009): they read SOV sentences faster than OSV sentences, but required more reading time for subject than object DPs. However, ERP data shows that L2 Basque learners were using a different processing mechanism for O in OSV sentences. This was interpreted as evidence that L2 learners' processing is not identical to native speakers' processing, when the learners' L1 lacks a structure (here, OSV word order) available in the L2.

Turning to SV versus OV agreement, Zawiszewski et al. (2011) reported that L1 and L2 Basque learners performed comparably in both behavior and ERP results when processing OV agreement violation (for Person). L2 Basque speakers exhibited the same patterns as native speakers; Zawiszewski et al. claim that this was expected, based on the fact that both Spanish and Basque require verb agreement. Note that on the analysis put forth here, although SV and OV agreement (i.e., the generation of ERG and ABS doubled clitics) both involve the Agree relation, the nature of this relation is far from similar otherwise. It is questionable whether the

¹⁰ Note that the acquisition hypotheses discussed in Section 2 do not reference parametric variation, taking a feature-based approach to the acquisition task instead of parameter re-setting. Despite this difference in theoretical perspective, the results of these studies are important in informing the present research.

existence of Agree between T and the subject in Spanish can be compared with Agree between *v* and the Object in Basque. It is notable that L2 Basque speakers processed like native speakers in processing OV agreement violations, as verb agreement in their L1 (Spanish) is limited to SV agreement. However, even though Person agreement violations are argued to be processed differently for subjects and objects (Zawiszewski & Friederici, 2009), Zawiszewski et al. suggest that the process by which SV and OV agreement relations are derived is the same. Again, this claim diverges from that put forth in the present analysis. Thus, non-native speakers are able to achieve native-like processing despite the fact that multiple agreement controllers are available in the L2.

Regarding Case, a parametric approach would predict that L1 Spanish-L2 Basque speakers would not process ERG Case like native speakers, due to the NOM-ACC alignment of their L1. This hypothesis was supported by Zawiszewski et al. (2011), who found not only ERP differences between L1 and L2 Basque speakers, but also behavioral differences; even highly proficient learners made more errors in assessing ERG Case violations than native speakers. These observations support preliminary findings by Zawiszewski & Laka (2009), whose ERP findings suggest native Basque speakers are more sensitive to ERG Case violations than L2 Basque speakers.

Further exploring the role of case alignment in the L1 as a factor in L2 processing, Zawiszewski, Erdocia, & Laka (2010) compared L1 and L2 Basque speakers' processing of ERG and DAT case violations (omission of the case marker). They found that native and nonnative speakers reacted differently to missing ERG Case markers, but reacted the same when faced with a missing DAT Case marker. This is attributed to the fact that while ERG Case appears in Basque but not Spanish, both languages have DAT Case and so it can be processed in Basque as

in Spanish for L2 learners. Taken together, the findings of these studies further support the hypothesis that highly proficient L2 speakers are able to process like native speakers if the same structure is found in their L1 (e.g., DAT Case), but will process differently if the structure is unique to the L2 (e.g., ERG Case).

Finally, looking at ambiguity, Erdocia, Zawiszewski & Laka (2014) tested both fully ambiguous sentences and resolvable ambiguities with L2 Basque speakers, as Erdocia et al. (2009) did for native speakers. Regarding fully ambiguous sentences (which were not resolvable based on real-world knowledge or AUX selection), they found that L2 speakers imposed SOV word order and ambiguity did not register, which is what was observed with native speakers. When presented with temporarily ambiguous sentences, resolvable based on real-world knowledge about e.g., lupine diet, L2 Basque speakers showed effects in OSV sentences that were not observed with native speakers.¹¹ These findings further support the view that when something is not available in the L1 (e.g., free word order and object-initial sentences), it cannot be processed at a native-like level in the L2.

Overall, studies on highly proficient, early acquiring L1 Spanish-L2 Basque speakers have shown that although performance may approximate that of native speakers, the underlying processing mechanisms are not necessarily the same. Specifically, if the L1 and L2 diverge on a parametric setting (e.g., headedness, case alignment), L2 speakers will process related violations differently from native speakers (Erdocia et al., 2014; Zawiszewski et al., 2011; Zawiszewski & Laka, 2009). However, if the parameter or characteristic is shared (e.g., verb agreement, DAT

¹¹ These effects included the elicitation of different components between the two groups, which the researchers interpret as use of different neural resources being recruited to interpret the same structure (Erdocia et al., 2014, p. 815).

case marking), the processing results of L1 and L2 Basque learners are virtually indistinguishable (Zawiszewski et al., 2010, 2011).

Returning to the generativist perspective in which this study is based, there is only one study with L2 Basque learners exploring questions of ergativity and AUX production.¹² Rodríguez-Ordóñez (to appear) examined data from Basque native speakers, early sequential bilinguals, advanced L2 learners, and intermediate L2 learners. She compared oral interview data with the results of an elicited production task and a grammaticality judgment task, and scored the results for accuracy with ERG case marking on nominals, the production of doubled clitics on AUX, and the selection of the correct AUX root.

Overall, Rodríguez-Ordóñez found that in interviews, all speakers omitted the ERG case marker on DPs. Doubled clitic production and AUX selection were overwhelmingly correct, although an improvement in accuracy was seen between L2 intermediate and advanced learners. In elicited production, omission of the ERG marker on nominals was relatively uncommon by L2 advanced, sequential bilinguals, and native speakers; L2 intermediate speakers omitted the ERG marker significantly more (though still producing it in over half of obligatory contexts). All groups of speakers exhibited high accuracy in AUX selection, although again L2 intermediates were somewhat less accurate than L2 advanced speakers. Finally, on the grammaticality judgment task, all speakers were largely accurate in their judgment of ERG nominal marking in

¹² The studies described above, although they consider issues of ergativity and engage generativist constructs (e.g., parameters) in the discussion, are not ‘generativist SLA studies’ in the sense that their primary focus is on processing; in characterizing Rodríguez-Ordóñez’s work (and the present study) as generativist, in comparison to the processing studies cited above, I appeal to the nature of the research questions, which investigate theories of abstract underlying representations, and the nature of the tasks, which do not seek reaction times or other neural processing measures. This is not to say that the results of processing studies are not useful in informing generativist research agendas in SLA, as the discussion above was intended to show.

obligatory contexts (i.e., transitives), but learners showed greater difficulty in variable (i.e., unergative) contexts.

Taken together, Rodríguez-Ordóñez's results demonstrate overall high accuracy in the domains of ergativity and AUX formation, with a marked improvement in performance as proficiency increases from intermediate to advanced. Her results also demonstrated more variability in production/interpretation of the ERG marker on nominals than in AUX selection/clitic production. On the analysis that she adopts, where case marking, AUX selection, and clitic production are all evidence of underlying syntactic relations, the variability in performance suggests that the underlying syntactic relations are indeed established (as evidenced by AUX selection and production), while non-native-like performance is seen with nominal case markers.

Rodríguez-Ordóñez considers the same L2 debate addressed in this study: whether non-native-like performance among learners finds its source in the syntax or in the morphology. These results suggest that there is not a deficit in learners' underlying syntactic knowledge, but rather there is an impediment with surface-level morphology, specifically the production of DP case markers.

Although the present study focuses on learner performance and interpretation and not processing ability, the studies reviewed here offer valuable insight about the behavior expected of native controls and highly proficient participants. First, similar and highly accurate performance can be expected of these groups, particularly when dealing with canonical word order; if fully and unresolvably ambiguous sentences are encountered, they can be expected to be processed as SOV without consideration given to the ambiguous interpretation (Erdocia et al.,

2009, 2014). However, the experimental materials will avoid non-canonical word order generally, and especially when it leads to unresolvable ambiguity.

More relevant to the research questions here are native versus nonnative speakers' abilities with agreement violations and case marking. Regarding agreement violations, highly advanced learners can be expected to perform and process like native speakers (Zawiszewski et al., 2011), on the basis that both the L1 (Spanish) and L2 (Basque) require verbal agreement. However, it is possible to expect variation in learners' performance based on the type of agreement violation encountered, as native speakers were reported to process Person and Number violations differently (Díaz et al., 2011; Zawiszewski & Friederici, 2009). Although behavioral differences may not be observed at the highest proficiency levels, it is possible for processing differences to manifest in behavioral differences for beginner and intermediate learners.

Finally, concerning Case, differences are expected between native controls and L2 learners based on the different alignments of the Spanish and Basque Case systems. Particularly, behavioral differences are expected with ERG Case violations (Zawiszewski et al., 2011), as errors in grammaticality judgment persist even at high proficiency levels. These results were supported by Rodríguez-Ordóñez (to appear). Additionally, the role of transfer from the L1 to the L2 can be further explored based on learners' abilities with DAT Case markers, as these are present in both Spanish and Basque. Although accuracy will likely increase with proficiency, ultimately learners should be better with DAT Case markers than ERG (Zawiszewski et al., 2010).

3.2 Early Basque acquisition of case and AUX agreement

This section discusses studies of the acquisition of Case and AUX agreement morphology by children acquiring Basque. Although the trends seen among these children cannot be directly extended to adult L2 learners, they may offer some insight into the particular constructions that adult learners may find challenging. Acquisition of case is investigated through two avenues: the use and misuse of case markers on nominals (Section 3.2.1), and the presence/absence/substitution of ABS, ERG, and DAT doubled clitics on AUX (Section 3.2.2). This section discusses findings on both from child language data; the trends from these studies are considered in terms of adult L2 Basque learners (Section 3.2.3).

3.2.1 DP case marking

Austin (2007) examines the acquisition of case marking on Basque DPs by 2L1 Basque-Spanish acquiring children in comparison with their L1 Basque-speaking peers. Assuming that bilingual children develop two grammars simultaneously, Austin claims that the Spanish grammar interferes with the Basque grammar in the acquisition of ERG case, with these children producing ABS-marked subjects in ERG contexts more than monolingual children. Specifically, she looked at the use of case marking in unaccusative intransitives, unergative intransitives, and transitive sentences. Recall that in Basque, the subjects of transitives and unergatives are marked with ERG case, while the subjects of unaccusatives and the direct objects of transitives are marked with ABS case. By contrast, in Spanish, subjects of all sentence types (unaccusatives, unergatives, and transitives) are marked with NOM case.

Austin assumes the same basic transitive Case-assigning structures for Basque and Spanish, with T assigning ERG case to an argument in Spec, vP, and ABS case being assigned by v to a complement of V. In Spanish, NOM is assigned by T^o and ACC by v^o. Children

acquiring Basque and Spanish must acquire the distinction in subject case marking between the two languages. Additionally, they must learn that Basque has a rich system of case marking on pronouns and full DPs, while overt case marking in Spanish appears only on pronouns and clitics. Finally, children must learn that the default case in Basque is ABS, while it is NOM in Spanish.

Austin compared interview data from 20 bilingual Basque-Spanish learning children between the ages of 2;00 and 3;06 and 8 monolingual Basque-learning children. She hypothesized that bilingual children would appeal to grammatical transfer for relief in challenging constructions with which monolingual children showed difficulty as well. The hypothesis was tested by examining omission of ERG case marking by bilingual children, compared to monolingual children.

Austin notes that “ergative case marking for subjects is reported to be difficult for monolingual and bilingual children” (Austin, 2007, p. 319), omitted by many children in all phonological contexts (Barreña, 1995; Ezeizabarrena & Larrañaga, 1996). Not only has previous research found that ABS case marking on nouns appear before ERG marking (Larrañaga, 1994), lining up with case markedness hierarchies for ERG-ABS languages, but ERG agreement on AUX precedes production of the ERG case marker on nouns (Ezeizabarrena & Larrañaga, 1996). This lapse was not found in the production of ABS case (as evidenced by use of demonstrative pronouns) and agreement marking, and is claimed to be due a delay in the child’s realization of the relationship between ERG case and agreement marking. Speculatively, this could be attributed to the fact that children have evidence for DPs without over Case markers, while the transitive AUX does not surface without ERG agreement (though admittedly, this is null in 3rd Person singular contexts).

Errors of ERG omission were seen productively in the speech of 10 out of 20 of the bilingual children studied, while the remaining half did not produce this kind of error; overall, 52 percent of ERG markers in obligatory contexts were dropped by 50 percent of bilingual participants. By comparison, monolingual children omitted ERG case markers productively in 31 percent of obligatory contexts. Unlike on full DPs, in demonstratives, omission of the ERG marker does not result in a form identical to the ABS one; in examining these productions, Austin found substitution of ABS demonstratives in ERG contexts.

Austin distills two questions from her findings: “first, why all children acquiring Basque substitute absolutive for ergative agreement, and second, why bilingual children do so to a greater extent than monolingual ones” (Austin, 2007, p. 323). In response to the first question, she looks to a morphological (rather than syntactic or phonological) deficiency, similar to the (over)use of accusative pronouns as the default in monolingual English-acquiring children. She claims that ERG case is assigned abstractly but is spelled out by children as the ABS default. Thus, overuse of ABS marking is failure by children (both bilingual and monolingual) to select the proper lexical item at Spell Out, selecting instead an underspecified one. Austin suggests that L1 learners of Basque *or* Spanish use a default case marking; in Spanish-learning children this effect is masked by the fact that the default NOM case is appropriate for all subjects, while it is evident in Basque-learning children based on the split in subject marking. Therefore, this finding is not ultimately related to acquisition of Case assignment procedures, but rather morphological realization of those operations and relationships.

To explain the difference between monolingual and bilingual children, Austin suggests that overgeneralization of the ABS marking in ERG contexts by 2L1 children is the result of partial transfer from Spanish (unified subject marking) rather than evidence of complete transfer

of the case-marking system. She notes that all children learning Basque lapse in ERG case marking of subjects, attributing this to the selection of a less-specific lexical item during Spell Out when a more specific one is available. Evidence against the wholesale transfer of Spanish to Basque in this regard comes from the distinction children make in selecting AUX for transitive, unaccusative, and unergative verbs in Basque, which to Austin suggests an underlying correct analysis of structural case marking. These findings add to previous research that has targeted interface areas as having a high probability of cross-linguistic transfer in early bilingual learners.

Ezeizabarrena (2012) also investigated the acquisition of case marking, looking at both case marking on DPs and production of AUX by young L1 Basque children, 2L1 Basque-Spanish speaking children, and children who began learning Basque between the ages of 2;00 and 3;00 as a cL2. This study attributed the difficulties observed with ERG case marking to both language-internal inconsistencies in ERG marking and input frequency as the possible source.

Ezeizabarrena assumes a syntactic structure in which case of ERG subjects ((di)transitive and unergative) is checked in Spec, TP, subjects of unaccusatives receive ABS from Spec, TP, and direct objects of (di)transitives receive ABS case from Spec vP. Despite pro-drop, the ERG-ABS distinction is visible in most constructions due to clitics on AUX. However, there are a few cases (syncretism, allomorphy, homophony) in which the distinction is not morphologically available (Ezeizabarrena, 2012, p. 306). Thus, while ERG and ABS remain distinct in underlying structure, these three indistinguishing contexts in the input may confuse the learner's analysis of the case marking system. (In contrast to ERG and ABS, DAT marking can always be observed both on AUX and on DP arguments.)

Ezeizabarrena's study looks at the production of case marking by children of two age groups: children under 4;00 acquiring Basque as an L1 or 2L1, and children between 5;00 and

8;00 acquiring Basque as a cL2. For the L1/2L1 group, ABS marking tends to be target-like. Initially, overt case marking (ERG and DAT) on DPs is not productive, though its use increases as more multiword utterances are used. Errors in case marking often involve omission, and the rate of omission steadily decreases. Turning to AUX, inflection is produced gradually, with subject-verb agreement on AUX (for ERG or ABS) appearing before object-verb agreement.

Considering the cL2 group, Ezeizabarrena (2012) reviews the results of Ezeizabarrena et al. (2009) who compare L1 Basque children with early-acquiring (AoA = 2;00-3;00) cL2 Basque children. It was found that children of both backgrounds could produce target-like ERG case marking and AUXs, though errors in both domains were observed. Although cL2 children produced slightly fewer target-like verbs earlier on (age 5;00), by the time they reached 8;00 their production was comparable to L1 children. The fact that both groups showed a significant difference in accuracy between 5;00 and 8;00 suggests that the AUX paradigm takes a considerably long time to acquire. Older children of both language backgrounds show productive use of case morphology, though some deviance from target usage was found. Specifically, children tended to omit overt markers (ERG more so than DAT); overall, cL2 children made more errors of omission than L1 children. Overt case markers did not tend to be used incorrectly (nor were they overgeneralized) by children of either language background. Although accuracy in overt case marking increased with age, there was no significant within-group difference.

In sum, this study looked at the acquisition of Case in two ways: in case marking on DPs and in verbal inflection, as produced by children of two different age groups. While younger children's production of AUX morphology showed knowledge of the ERG-ABS distinction, target-like production of DP case marking was delayed (Ezeizabarrena, 2012, p. 314). Older children showed greater accuracy with DP case marking, while continuing to make errors in

AUX inflection (i.e., clitic production); this suggests that issues with DP case marking are overcome more easily than the challenge presented by the AUX paradigm. Overall, age of first exposure does not seem to impact patterns of acquisition if learners begin before age 3;00, with performance of both groups leveling out by 8;00.

3.2.2 Doubled clitics on AUX

Meisel & Ezeizabarrena (1996) focus specifically on the acquisition of verbal agreement (that is, ABS, ERG, and DAT clitics on AUX), questioning if SV and OV agreement¹⁴ should be treated as one phenomenon. Examination of the patterns of production in L1 child Basque offers insight into differences between acquisition of SV and OV agreement.

The participants in this experiment included two 2L1 Basque-Spanish-speaking children, M and J, between the ages of 1;07 and 4;0. Overall, Meisel & Ezeizabarrena found that SV agreement is acquired in advance of OV agreement; further, direct object agreement is generally produced before indirect object agreement. Meisel & Ezeizabarrena determined five distinct stages of AUX acquisition through which each child progressed.

Stage 1 involved production of uninflected, infinitival main verb participles without AUX. By age 1;07, M progressed to the use of finite main verbs in formulaic utterances, which did not involve AUX. Stage 2 (M: 1;09-1;11, J: 2;04-2;07) involves production of finite verbs; when AUX was used, clitics were limited to subjects, and 3rd Person singular marking is overgeneralized. In Stage 3 (M: 2;00-2;03, J: 2;08-3;00), subject clitics started to include other Person features; the children ceased making further errors in Person marking on AUX. In Stage 4 (M: 2;04-2;06, J: 3;01-3;02), the children began to produce direct object clitics. However, the

¹⁴ As above, I acknowledge that the use of the terms ‘SV’ and ‘OV’ diverge from the characterization of these relations put forth earlier in this dissertation; here, I use the terms selected by the authors to explain their results to avoid any mischaracterization of their position on theoretical issues, or erroneous misinterpretation of the patterns they observe.

authors note that unambiguous evidence for direct object marking was minimal, as objects can be null and 3rd Person singular agreement marking is sometimes /ø/. However, after 3rd Person plural and 1st Person singular clitics emerge, the contrast with 3rd Person singular is more apparent. Overall, the evidence of Stage 4 shows that children acquire subject agreement before direct object clitics. Finally, in Stage 5 (M: 2;07-3;03, J: 3;03), the children begin to use DAT clitics. Interestingly, while one child overgeneralized use of the ditransitive AUX (using it in transitive contexts), the other child sometimes failed to use ditransitive AUX.

The data from these two bilingual children show that subject marking on AUX is acquired before direct object marking, which appears before indirect object marking. Longitudinal data from an L1 Basque-speaking child of the same age (Barreña, 1994) confirms that subject agreement is acquired first, though the evidence was not definitive as to whether direct and indirect object marking followed the same pattern as the 2L1 children.

Austin (2012) compares the order of emergence of ERG, ABS and DAT doubled clitics on AUX by 2L1 and L1 Basque-learning children between ages 2;00-3;06. She found that these forms were produced sequentially, with ABS appearing first, followed by ERG, followed by DAT. Specifically, ABS clitics were acquired before ERG clitics, and ERG clitics were only used in contexts where ABS clitics were being used productively. Errors in agreement were those of omission or substitution, with ERG and DAT doubled clitics generally being omitted by the youngest participants. Rarely, intransitive AUX was substituted for transitive AUX, and transitive was substituted for ditransitive.

Austin offers several possible explanations in the literature that claim to account for this order of acquisition. First, she notes the input that Basque-acquiring children receive from their adult interlocutors may impact production. It is suggested that children essentially compare

statistical analyses of the frequencies with and contexts in which they hear certain forms, so high-frequency morphological markers would be the first to appear in child speech. However, analysis of the child-directed adult input in her data shows that while adults produced a high level of ERG doubled clitics in their speech, the children produced ABS clitics sooner than ERG suggesting that frequency in the input does not completely explain order of acquisition

Second, Austin looks at the impact of morpheme order in the target construction on the order of acquisition. She notes that Pye et al. (2007) found that children acquiring five Mayan languages began to produce morphology on the right edge of the verb before morphemes on the left. For Basque, this would predict early production of ERG and (in some contexts) DAT morphemes. Basque-learning children, however, did not simultaneously produce right-edge ERG and DAT experiencer agreement that Pye's data would predict. This suggests that morpheme order does not necessarily impact overall order of acquisition.

Finally, she looks at an explanation of structural morphology, considering the case feature hierarchy proposed by Calabrese (2008) to distinguish NOM-ACC languages from ERG-ABS languages, and within those systems to derive differences between cases.¹⁵ Following this case feature hierarchy, acquisition would follow an implicational hierarchy, with less-marked cases produced before more-marked ones. Austin argues that featural complexity in case best predicts the order of acquisition seen in Basque-acquiring children's data. Assuming features are privative, and following Calabrese (2008), she analyzes ABS agreement as having no case features, while ERG has only one feature, and DAT has two. If this breakdown of Case features is not adopted, these findings could be explained in more general markedness terms, with ABS

¹⁵ Note that these are the features that Arregi & Nevins (2012) use to distinguish ERG and DAT Case; they are not adopted in the present analysis.

as the least-marked Case, followed by ERG, followed by DAT. This mirrors the m-case-markedness hierarchies discussed in Marantz (1991) and Bobaljik (2008).

Thus, the least complex clitics emerge before the more complex forms. Errors of omission can be explained following the Subset Principle of DM, which allows for a less-specific VI to be inserted in a terminal node with more featural specifications (so, an ABS morpheme with no case features can technically appear in an ERG terminal node).

3.2.3 Implications for adult Basque learners

Taken together, these four studies (Austin, 2007, 2012; Ezeizabarrena, 2012; Meisel & Ezeizabarrena, 1996) suggest the following trends in the acquisition of Case and AUX by young learners of Basque. Regarding case marking on DPs, Austin (2007) and Ezeizabarrena (2012) found that ERG case marking is frequently omitted by young children, producing a form that is identical to an ABS argument. Austin cites the fact that ABS demonstrative pronouns are used in ERG contexts in claiming that (bilingual) children may be overgeneralizing a default case, rather than omitting Case morphology. Ezeizabarrena (2012) notes that errors in case marking decrease, as children grow older. In the realm of AUX, Ezeizabarrena (2012) notes that children's errors in clitic production persist longer than DP case-marking errors. As these forms are being acquired, a discernible order of acquisition is visible among the AUX doubled clitics. Subject ABS clitics on AUX appear before ERG clitics, and subject ERG clitics co-occur with direct object ABS clitics; DAT clitics are last to appear (Austin, 2012). Meisel & Ezeizabarrena (1996) note that subject markers (in both transitive and intransitive verbs) appear before overt direct object markers, which appear before indirect object markers.

The patterns of child acquisition might not be expected to be replicated by adult learners. The grammar of the L1 is expected to have a strong influence on the L2 acquisition process.

However, based on the findings above, it is possible that adults, like children, will initially make errors of omission in DP case marking (particularly if DPs are not overtly marked in the L1) at a greater rate than they will make errors with AUX. Additionally, adults may establish a ‘default’ case marking for DPs, as Austin (2007) claims children do with ABS. Like the bilingual children, this could be attributed to the use of a non-target option from their NOM-ACC L1, Spanish. In the production of AUX, transfer from a language that only marks subject-verb agreement might lead to a pattern like that observed by Meisel & Ezeizabarrena (1996): subject clitics before direct object clitics. It is uncertain if L2 learners would be expected to produce the pattern observed by Austin (2012), as transitive verbs (which require both ERG and ABS morphemes) are high frequency lexical items and less easily omitted altogether by adult learners whose grammatical knowledge encourages them to produce more complete phrases and sentences than children.

4 Cross-linguistic perspectives on L2 acquisition

This section looks at the L2 acquisition of structure involved in AUX from a cross-linguistic perspective. The experiences of learners acquiring clitic doubling (Section 4.1), agreement relations (Section 4.2), and case (Section 4.3) will help inform predictions for L2 Basque learners. Additionally, if the behaviors of Basque learners were notably different from the trends discussed here, it would offer insight into the role of language-specific characteristics in SLA.

4.1 Clitic Doubling

Recall that the structure of AUX involves clitics doubling ERG, DAT, and ABS arguments; these clitics have been referred to as AUX agreement in many of the studies cited above, but on the analysis proposed here they are distinct from agreement inflection on the

anchor of AUX. In this section, I consider studies that look at the L2 acquisition of clitic doubling in Spanish (Montrul, 1998, 1999) and clitics in general in French (White, 1996) to determine if how characterization of these morphemes may contribute to learner behavior. While the discussion of clitic doubling in L2 acquisition tends to be relatively theoretically neutral, my analysis will give specific consideration to the Agree-Link/M-merger process by which I claim doubled clitics are generated in Basque.

Montrul (1998, 1999) discusses the production of doubled clitics by learners of L2 Spanish, a language that requires clitic doubling with strong pronouns and clitic left-dislocation constructions, and permits it between indirect objects and DAT clitics. Some dialects allow clitic doubling between accusative clitics and direct objects (Montrul, 2004).

Montrul (1998) looked at L1 English and L1 French low-intermediate learners of L2 Spanish who performed a task in which they were asked to determine their preferred sentence from a pair; the task was performed four times during a semester. In the task, doubled clitics appeared with indirect objects and with DAT experiencers. The former were compared to constructions wherein there was no clitic doubling with the direct object, while the latter were compared to ungrammatical nominative experiencer sentences or DAT experiencers without doubled clitics.

It was found that neither L1 English nor L1 French learners performed as the native controls did. L1 English-L2 Spanish learners who do not have DAT clitics in their L1 showed problems with all pair types, not recognizing the optionality of doubled indirect object clitics, preferring NOM experiencers, and allowing DAT experiencers without a doubled clitic (although acceptance of this type decreased over the time of testing). French learners, who have DAT clitics in their L1 but disallow clitic doubling, initially did not acknowledge doubled clitics with

indirect objects to be optional (tending to prohibit them) and treated doubled clitics as optional with DAT experiencers (though they performed closer to native controls during later trials). Overall, Montrul found that clitic doubling rules are not immediately apparent to low-intermediate learners, though the patterns become more apparent as proficiency increases. Additionally, her findings suggest that the presence of DAT clitics in learners' L1 (French) helps acquire patterns for DAT clitic placement in the L2.

Montrul (1999) also considered the acquisition of optional doubled clitics with indirect objects in L2 Spanish by L1 English and L1 French learners, to determine if learners were acquiring the necessary functional projection for these constructions (i.e., AGRIOP). It was assumed that L1 French speakers would perform better than L1 English speakers, due to the DAT clitic in the former. Using a grammaticality judgment task, Montrul found a significant difference between the English speakers and native controls, but not between the French speakers and native controls. This study, like Montrul (1998) suggests that if a clitic is present in the L1 (even in non-clitic doubling constructions), it is easier to produce in doubled constructions in the L2.

Although this study does not directly investigate clitic doubling, White (1996) studied the acquisition of subject (NOM) and direct object (ACC) clitics by two L1 English children acquiring French as an L2 in an immersion classroom setting. This L1-L2 pairing is interesting because English does not have clitics; therefore, the children's task includes identifying an entirely novel syntactic object, as well as its placement and context of use. White found that subject clitics were present from the earliest interviews, although strong pronouns were sometimes (incorrectly) used in lieu of subject clitics. Several factors (no intervening material between clitic and verb, no conjunction) suggested that the children had correctly analyzed the

clitics as such, and were not imposing a strong pronoun characterization on them based on their L1.

Object clitics appeared later in the children's production, although they tended to avoid using direct objects altogether until later as well. When they emerged, object clitics proved to be correctly analyzed as clitics, and not as independent pronouns. Although object clitics were still erroneously omitted after their use began, and were occasionally incorrectly placed post-verbally, their use overwhelmingly suggests a clitic analysis. Taking the use of subject and object clitics together, although their use was not entirely target-like, it does not seem like there was any transfer effect that resulted in their misanalysis as strong pronouns (as in English). Rather, they were correctly understood to be clitics. White suggests that, at least for children, a new syntactic analysis is possible when the L1 does not offer the basis for transfer.

This section has reviewed studies of the acquisition of clitic doubling constructions in L2 Spanish by adult and of non-doubled clitics in L2 French by children. Montrul's studies compared learners whose L1 and L2 differed on whether they contained clitics; her findings suggest that if a clitic is present in the L1, it can be adapted into doubled constructions in the L2 with greater ease than if the clitic does not exist in the L1. However, White's study shows that L2 use of clitics is possible, even if the L1 does not contain them. Thus, for L1 Spanish-L2 Basque learners, DAT doubled clitics on AUX are predicted to be least problematic—not only does Spanish have DAT clitics (as in (9a)), but it allows doubling in some constructions, as seen with direct objects in (9b).

- (9) a. Le di el libro
CL.DAT I.gave the book
'I gave the book to him/her'

(Bleam, 1999, p. 1:(#3))

- b. Lo vi a él
 CL I.saw A him
 'I saw him'

(Bleam, 1999, p. 2:(#4a))

While Montrul's findings suggest that DAT doubled clitics will be relatively unchallenging for L1 Spanish-L2 Basque learners, ABS and ERG clitics are not predicted to be as easy. Just how much of a challenge they pose, however, depends on the impact that the new case alignment has. Spanish has an impersonal subject clitic, *se* (seen in (10a) and direct object clitics, as in (10b).

- (10) a. Se trabaja demasiado allí
 CL.NOM works too-much there
 'One works a lot there'

(Cf. Zagona, 2002, p. 31:(#24a))

- b. Lo vi
 CL.ACC.MASC I.saw
 'I saw him'

(Bleam, 1999, p. 1:(#2))

If Case is left aside and clitics are associated with grammatical roles, it is possible that learners will be able to extend their knowledge of subject (NOM) clitics and direct object (ACC) clitics to Basque, and use it to produce subject (ERG or ABS) and direct object (ABS) clitics. However, it is also possible that the ERG-ABS case alignment will interfere with L1 transfer, and knowledge of L1 NOM/ACC clitics would not be readily adaptable to the L2. This latter scenario is more likely, especially considering that doubled clitics do not always correspond clearly with grammatical role, as in the case of ERG Displacement where an ERG (subject) clitic Moves post-syntactically to the AUX-initial position left vacant in the context of a 3rd Person ABS argument.

- (11) Zu-k emakumea ikusi z-enu-en
You-ERG woman seen 2S.ERG-have.3S-PAST
 ‘You have seen the woman’

(Laka, 1996:(#58))

Overall, extending Montrul’s findings to Basque suggests that the fewest errors are expected with DAT doubled clitics, which are shared by the L1 and the L2. More difficulty is expected with ERG and ABS clitics, although whether their production will be aided by learners’ experience with subject (NOM) and direct object (ACC) clitics in their L1 remains to be seen.

4.2 Agreement relations

Recall from Chapters 3 and 4 that there are numerous Agree(-Link) relations underlying AUX. These relations are summarized in Table 1.

Table 1. Agree relations underlying AUX

Relation Type	Probe	Goal	Evidence
Agree-Link	T	ERG DP	ERG doubled clitic
Agree-Link	v (π , #)	DAT DP (via P_{ϕ})	DAT doubled clitic (from π only)
Agree-Link, Agree-Copy	v (#)	ABS DP	ABS Number inflection on AUX
Agree-Link, Agree-Copy	v (π)	ABS DP	ABS doubled clitic (only if 1 st /2 nd Person)
Agree-Link	P	DAT DP	Accessibility of DAT for clitic doubling

Beyond the Basque subject-verb/object-verb agreement studies reviewed in Section 3.1.2 above, L2 acquisition studies overwhelmingly look at the acquisition of NOM-ACC languages, in which agreement with finite T results in subject-verb agreement and NOM Case assignment. This section reviews a few such studies (Hawkins & Casillas, 2008; Lardiere, 1998, 2006; Slabakova & Gajdos, 2008; White, 2003).

Lardiere (2006) conducted a longitudinal case study with an L1 Mandarin Chinese/Hokkien-L2 English speaker, Patty, who achieved native-likeness in a variety of English

constructions not present in her L1, including “knowledge of overall pronominal case-marking, case-marking on subjects in particular as a function of clausal finiteness, ...various word-order related phenomena, ...robust relative clause formation and *WH*-movement in general...[as well as] use of determiners...” (Lardiere, 2006, p. 37). Patty was consistently deficient in her spontaneous spoken production of verbal inflectional morphology, including the 3rd Person singular present tense marker /s/ (supplied in about 4 percent of obligatory contexts) (Lardiere, 2006). However, this may not be the result of a missing or defective T; Lardiere (1998a) reports that despite showing only 34 percent suppliance of past tense verbal morphology in obligatory contexts, case-marking on subject and object pronouns was 100 percent accurate. If NOM case marking is considered a function of finiteness in English as Lardiere analyzes it, these results indicate that Patty had knowledge of the [+finite] feature on T. Further, Lardiere (1998) points out that Patty was accurate in selection of case-marked pronouns in object control, ECM, and small clause constructions; this suggests that it was indeed finiteness influencing her pronominal selection and not the grammatical function of the pronoun. Taken together, the findings suggest that Patty has mastered a good deal of English narrow syntactic structure, and the featural relationships that facilitate it, even in constructions that do not appear in her L1. This further suggests that the syntactic relation between T and the subject DP is not the main source of difficulty—what poses a challenge is the production of verbal inflectional morphology in spontaneous speech.

White (2003) looked at production of inflectional morphology by an L1 Turkish-L2 English learner. She reports a higher level of suppliance of verbal morphology (around 80 percent) than Lardiere (1998a), and attributes this to the fact that this learner’s L1 is rich in inflectional morphology. Like Lardiere, White reports a high level of NOM case marking on

subject pronouns, suggesting by some analyses that T is available and can Agree with the subject DPs. Taken with Lardiere's studies, White supports the claim that while learners' production of inflectional morphology may not be target-like, there is evidence for the underlying syntactic relation between T and the DP with which it agrees.

Hawkins & Casillas (2008) review a number of studies on the production of verbal morphology by early-stage L2 learners. They find that when inflectional affixes on verbs are present, there is usually no mismatch in subject-verb agreement; however, it is not always the case that these affixes are produced. Further, lack of inflectional production is not always indicative of an L2 transfer effect (cf. Ionin & Wexler, 2002). This indicates that even early-stage L2 learners can optionally produce the Agree relation, although it is not always marked; as Lardiere (1998a) suggests, lack of inflectional morphology need not implicate the absence of the underlying syntactic relation.

Another study on the acquisition of subject-verb agreement (agreement with T) is Slabakova & Gajdos (2008). In this study, beginning and intermediate L1 English learners of L2 German were given a multiple-choice test wherein they had to select the correct subject for a given copular verb form. Overall, Slabakova & Gajdos found a surprisingly high error rate, especially considering the high frequency of these forms as well as the explicit instruction learners receive with them. This study suggests that L2 learners, at least at lower proficiency levels, might show some difficulty with agreement between T and a subject DP. However, Slabakova & Gajdos' results should be viewed with caution; in an extended replication study, Siebecker (2014b) found that both L2 German and L2 French learners at beginner, intermediate, and advanced proficiency levels performed near or at ceiling; these findings suggest that SV agreement can be successfully produced early in the L2 acquisition process.

The studies discussed here have suggested that acquiring knowledge of the syntactic agreement relation between T and a DP subject is possible, even when the morphological representation of this relation is not expressed at a native-like level (Hawkins & Casillas, 2008; Lardiere, 1998, 2006; Slabakova & Gajdos, 2008; White, 2003). However, it is possible that even beginning-level learners can produce native-like SV agreement in laboratory contexts (Siebecker, 2014b).

The analysis proposed for Basque moves beyond the relation between T and a (KP+) DP that results in Case and verbal agreement. Specifically, Agree is broken into two operations: Agree-Link, and Agree-Copy. The former is the syntactic Agree relation that values uninterpretable features and results in Case assignment (and facilitates clitic doubling via M-merger). Agree-Copy is responsible for the features that will be manifested in agreement morphology on AUX. For Basque, Agree-Copy is limited to ABS arguments. Thus, the types of evidence for an Agree relation discussed above are not necessarily applicable for all Agree relations in Basque. The argument whose Agree configuration(s) will most closely mirror those discussed above is ABS, in its Agree-Link and Agree-Copy relations with *v*; several structures can offer evidence of these relations. This includes the presence/absence of ABS doubled clitics (evidence of Agree-Link between the ABS argument and the Person feature in 1st/2nd Person contexts), ABS agreement on the anchor of AUX (always in Number, 1st/2nd Person only in Person), as well as ABS case marking on pronouns and full DPs. Even if learners do not accurately produce all clitics, anchor agreement, and DP marking, the correct production of one would suggest that the underlying relation is intact. As the ABS Case marker is null (\emptyset), ABS marking on full DPs would require further evidence from anchor agreement, doubled clitics, or demonstratives to be convincing.

ERG Case is also posited to be assigned via Agree-Link, meaning that there are two sources of evidence for this relation: overt Case-marking on ERG DPs, and ERG doubled clitics. As ERG arguments are not eligible for Agree-Copy, these features will not be manifested on the anchor of AUX.

Finally, DAT arguments are argued to receive Case inherently; therefore, accurate Case-marking on this DP cannot be taken as evidence of an underlying Agree-Link relation. The only evidence of Agree-Link between DAT DPs and *v* is the presence of DAT doubled clitics. Like ERG arguments, DAT arguments are not eligible for Agree-Copy.

In sum, in most cases, Basque does offer multiple sources of morphological evidence for Agree relations like NOM-ACC languages do, but not all Agree relations are represented equally at the morphological level. The relation(s) between the ABS argument and *v* is manifested several ways, including the presence/absence of ABS Case markers/selection of ABS pronouns, ABS agreement on the anchor of AUX, and ABS doubled clitics (where possible). If a learner accurately produces any of these, it can be taken as evidence for the existence of the Agree relations and the source of non-native-likeness can be attributed to a holdup in morphological production. Agree between the external argument and T can be assessed through doubled clitics, or by ERG Case marking on the DP. However, the only morphological manifestation of Agree with DAT arguments is doubled clitics; this Case is inherent, thus not resulting from Agree, and the features of these arguments are not reflected on the anchor of AUX.

Although the studies reviewed here show learners are capable of forming necessary Agree relations, it will be a challenge to prove this for DAT arguments if their doubled clitics are omitted from AUX. Meanwhile, multiple sources of evidence for ABS and ERG Agree relations exist.

4.3 Acquisition of ERG-ABS Case system

Yet another challenge facing L2 Basque learners to be discussed here is the acquisition of the ERG-ABS case system of Basque; this has been referenced in Sections 4.1 and 4.2, but receives more detailed discussion here. To date, few studies explore the acquisition of the ERG-ABS case system by learners whose L1 is NOM-ACC; the simultaneous acquisition of both systems by bilingual Basque-Spanish children is discussed by Austin (2007) and childhood L2 Basque acquisition is discussed by Ezeizabarrena (2012). Recall from Section 3.1 that Zawiszewski et al. (2011) found that highly proficient, early acquiring L2 Basque speakers showed both processing and behavioral differences from native speakers when presented with ERG Case violations, assessing ungrammatical sentences as correct more than L1 Basque speakers. A difference in how L2 Basque speakers process ERG Case was also found by Zawiszewski, Erdocia, & Laka (2010); interestingly, this study showed that L1 and L2 Basque speakers processed DAT case in the same way.

However, these studies look at grammaticality judgments and processing by the most advanced L2 speakers. Little research has been done in the way of production of case-related elements (DP markers, doubled clitics), especially for learners at lower proficiency levels. The present study will look not only at the interpretation of Case markers and doubled clitics by L2 Basque learners of varying proficiency levels, but will also elicit production of case morphemes. The remainder of this section focuses on the production and interpretation of case morphology when the alignment of the L1 and the L2 are the same, in order to inform predictions about what might be expected of L2 learners.

When case realignment is not at issue, it seems that the presence of a robust case system in the L1 facilitates acquisition of case-marked elements in an L2. Hopp (2009) reports that

although some L2 learners at the advanced proficiency level have difficulty processing inflectional morphology cues in their L2, this effect was tempered if similar morphology existed in their L1. In Hopp's (2009) experiments, L2 German learners with various L1 backgrounds (English, Dutch, and Russian) were asked to perform an untimed grammaticality judgment on a series of German sentences, some of which contained verb-placement or case-marking errors. Hopp saw L1 effects, as Russians (whose L1 contains a robust case-marking system) outperformed English and Dutch L2 German learners. These findings suggest that if case morphology is present in the L1, its function can be easily recognized in the L2. Interestingly, near-native level L2 groups of all L1 backgrounds performed at a native-like level on this task, suggesting that this initial difficulty can be overcome. It was only when an additional processing burden was added (in a speeded grammaticality judgment task) that L1 Russian near-natives outperformed L1 English/Dutch learners, though it should be added that on a similar test, native speakers also show a decreased accuracy as the processing burden (i.e., speed) is increased. This suggests that there are limitations to the processing abilities that may not necessarily be reflective of a deficiency in underlying knowledge.

Looking at the syntax underlying overt case marking, Schwartz & Sprouse (1994) found that an L2 learner can effectively learn alternative case assignment strategies not used in the L1. They studied word order in spontaneous spoken data of an L1 Turkish-L2 German learner. In the initial stages of his L2 acquisition, they found that he transferred word order (and thus the case assignment strategy, case-checking via agreement) directly from his L1. In a second stage of acquisition, the learner was able to produce some pronominal post-verbal subjects, but not nonpronominal post-verbal subjects. It should be noted that German is a V2 language, and therefore C is occupied by the verb when no other element appears there (e.g., a WH-element)

(B. D. Schwartz & Sprouse, 1994, p. 324). Schwartz & Sprouse interpret this as the result of adopting a strategy of case checking via incorporation, which is possible in German with pronouns, but impossible with nonpronominal subjects. Finally, both pronominal and nonpronominal post-verbal subjects were produced; this suggests another new L2 case strategy, one of case checking under government. This progression of production demonstrates that as the learner adjusts his underlying syntactic representations for the L2, new case strategies become available even if not present in the L1.

Turning to L1-L2 pairings where the former does not overtly mark all DPs, Haznedar (2006) investigates the L2 acquisition of the robust Turkish case marking system by an L1 English speaker. She found that the learner experienced some difficulty in the production of case-marked DPs. Variability seen included omission of case marking in an obligatory context, as well as the substitution of another case affix in lieu of the target one. However, Haznedar points out that these errors only appeared in sentences with canonical word ordering. Turkish allows scrambling; in scrambled contexts, case marking was produced accurately overall. Thus, her findings were twofold: first, arguments are not obligatorily case marked if they are not scrambled; second, despite overall low suppliance, case marking was used correctly in scrambled sentences. Thus, it seems that learners whose L1 has an impoverished case system can acquire a robust case system in the L2; also, these results indicate that learners understand the connection between case marking and word order. These findings are particularly applicable to Basque, as this language also requires overt case marking on some DPs and allows flexible word order. Haznedar's results suggest that case marking may be absent if canonical SOV word order is used, but will be present in scrambled sentences.

Papadopoulou et al. (2011) also investigated the acquisition of the case system in L2 Turkish, this time with participants whose L1 (Greek) contains some overt case marking on DPs. This study involved three tasks. The first, a cloze test, showed that learners became more accurate as proficiency increased and that their errors in production were more frequently those of omission than of substitution. The second task, a sentence-picture matching task showed the impact of proficiency, and that learners were more accurate when supplied with a sentence in the canonical word order than with a scrambled sentence that forced them to rely on case marking. The final task was a grammaticality judgment task; in this task, there was no significant difference in performance based on proficiency, though L2 learners were less accurate than native speaker controls. The results of this task showed that learners were more accurate in judging sentences in canonical word order. Recall that Haznedar (2006) found more accuracy in the production of case marking in scrambled sentences; this might suggest that Papadopoulou et al.'s learners should be able to interpret the morphological cues of case marking in scrambled sentences. However, it was shown that correct case marking and canonical word order worked together to facilitate learners' correct judgments. This emphasizes the finding that learners interpret the relationship between word order and case marking. Thus, canonical word order should facilitate learners' grammaticality judgments in Basque, suggesting that learners have a higher likelihood of correctly judging the suitability of the form of AUX in an SOV sentence. This expectation is supported by the findings of the influence of canonical vs. free word order both on processing and interpretation, an effect found for native Basque speakers (Erdocia et al., 2009; Zawiszewski & Friederici, 2009) and L2 Basque speakers (Erdocia et al., 2014; Zawiszewski et al., 2011).

Another way of looking at the acquisition of case marking in many languages is through the acquisition of a pronominal system; in this project, this will be reflected both in acquisition of doubled clitics and Case-marked DPs. Lardiere (1998a) discussed the production of case-marked NOM and ACC pronouns, finding that despite lack of verbal morphological evidence for the acquisition of finiteness, the native-like use of case-marked pronouns suggested that this feature of T was, in fact, acquired and active in the learner's grammar on her analysis of NOM Case.

For French, Prévost (2009) reports that subject (NOM) clitics are used early by L1 Swedish-L2 learners, with their frequency of use rapidly increasing. Direct object clitics in L2 French are delayed in spontaneous production¹⁶ (Prévost, 2009, citing Schlyter, 2003), and adult L1 Swedish-L2 French learners show difficulty in their preverbal placement (compared to the postverbal position of the DP for which they are substituted). Prévost (citing Hawkins, 2001; Towell & Hawkins, 1994) notes that object clitics are initially used in a post-verbal position, after which they are omitted altogether. When used again, they appear in an intermediate position before appearing in their correct preverbal target position. Although these studies do not specifically reference case marking, it can be claimed that L1 learners have an easier time with NOM pronominal arguments than with their ACC counterparts. Extended to Basque, this could suggest a difference in the accurate production of clitics in intransitive and transitive sentences. It might be expected that ABS clitics are produced consistently in intransitive AUX, but fail to be produced in transitive AUX.

¹⁶ In experimental contexts, higher rates of object clitics appear; these studies tend to consider L1 Spanish-L2 French learners, whose native language also contains preverbal clitics throughout the languages. The studies tend to focus on the rules of clitic climbing, which does not answer question of case acquisition.

In sum, L2 learners of Basque are faced with case system realignment, from NOM-ACC to ERG-ABS. Trouble with ERG Case markers persists even at high proficiency levels (Zawiszewski et al., 2010, 2011), although DAT Case is not problematic (Zawiszewski et al., 2010). A broader view of case acquisition literature suggests that the more robust the case system of the L1 is, the easier it will be to acquire a robust case system in the L2. For L1 Spanish-L2 Basque learners, this suggests that there will be more difficulty with Case marking on full DPs than either pronominal DPs or AUX clitics, as full DPs are not overtly case-marked in the L1, while pronouns and clitics are (Hopp, 2009; Prévost, 2009). There is also evidence that word order holds an influence on case marking, suggesting that learners will have an easier time with DP case markers in canonically SOV sentences than any scrambled constructions, although how this will manifest in interpretation versus production is unclear (Haznedar, 2006; Papadopoulou et al., 2011). Further, L2 learners may be able to adopt case assignment strategies based on acquisition of new syntactic representations, even if the strategy does not exist in the L1 (Schwartz & Sprouse, 1994).

5 Summary of learner expectations

This section has reviewed studies from various perspectives in order to gain an understanding of the behavior that might be expected of L2 Basque learners in their production and interpretation of AUX and DP Case marking, as will be tested in the pilot experiment in Chapter 7. This section summarizes predictions made based on previous work.

Section 2 reviewed generativist theories about the source of difficulty in the production of inflectional morphology by L2 learners. Representational Deficit hypotheses, specifically the IH (Tsimpli & Mastropavlou, 2007; Tsimpli & Dimitrakopoulou, 2007), predicted that learners will have difficulty with constructions involving uninterpretable features that are not present in

the L1. For L1 Spanish-L2 Basque learners, this suggests that the majority of their struggle will be with case-marked elements, both DPs and doubled clitics, as uninterpretable ERG and ABS features are not present in their NOM-ACC L1. In comparison, DAT case marking and clitics will not be a struggle because this uninterpretable feature can be transferred. Interestingly, the morphological features [have] and [appl] are not predicted to be problematic because, although they lack a semantic interpretation, they are not present in the syntax. Nativelike performance by learners, though unexpected, may be analyzable based on the use of (incorrect) uninterpretable features from the L1. Finally, there should be a marked difference in the performance of those learners acquiring Basque before versus after puberty.

Turning to morphological theories, the MUH predicted the overgeneralization of default 3rd Person, singular, and ABS features, which I take to be universally available, which would manifest on doubled clitics, the anchor of AUX, and DP Case marking. If neither the IH nor the MUH make accurate predictions for learner behavior, the FRH (Lardiere, 2008, 2009) offers the flexibility to isolate the trouble spots as either stemming from feature bundle assembly or determination of context for use, based on the specific types of errors learners make as well as what they do use accurately.

Section 3 looked at the existing work on Basque, including studies of high-proficiency, early-acquiring adults as well as L1, 2L1, and cL2 children. The studies of adult learners indicated that if a parameter is set differently in the L1 and the L2, processing is more complex for high-proficiency speakers (Erdocia et al., 2014; Zawiszewski et al., 2010, 2011). Based on these findings, I expect that L2 learners at lower proficiency levels will make more errors with L1-L2 mismatches. Indeed, behavioral errors have been shown to persist even at high proficiency levels with ERG marking (Rodríguez-Ordóñez, to appear; Zawiszewski et al., 2011).

Meanwhile, if parameter settings can be transferred from the L1 to the L2, high proficiency learners process like native speakers (Zawiszewski et al., 2011). Turning to findings from children, a pattern was noticed in the order of appearance clitics on AUX: ABS subject clitics before ERG, and more generally subject before direct object before indirect object clitics (Austin, 2012; Meisel & Ezeizabarrena, 1996). As for case marking on DPs, errors of omission/overgeneralization of the default case (ABS) might be expected (Austin, 2007; Ezeizabarrena, 2012).

Finally, Section 4 took a cross-linguistic perspective to the objects and relationships required in the production of AUX. Concerning clitic doubling, it is expected that the presence of clitics in the L1 will facilitate their doubling in the L2 (Montrul, 1998, 1999). This predicts very little difficulty with DAT doubled clitics, as these are doubled in both Spanish and Basque. A question arises about the influence of Case in clitic production: Spanish has subject and direct object clitics. Will this ease the production of ERG and ABS clitics, or will the realignment in case interfere with L1 transfer? As for Agree relations, studies have shown that they can be obtained in the L2 even if they are not accurately represented morphologically (Lardiere, 1998b, 2006; White, 2003). However, as only the v/ABS and T/ERG Agree relations have multiple sources of morphological evidence, it will be difficult to tell whether Agree relations obtain in the absence of overt doubled clitics with DAT arguments. Regarding the acquisition of the ERG-ABS Case system, the issue is twofold: realignment of the Case system, and production of case markers that do not exist in the L1. As for the latter, it is likely that doubled clitics will be more easily produced than DP Case markers, as pronouns but not full DPs are Case-marked in Spanish (Prévost, 2009). Regarding the latter, it is unclear whether Case system realignment can ultimately be obtained (Zawiszewski et al., 2011), but it has been shown that new Case

assignment strategies can be developed in the L2 (Schwartz & Sprouse, 1994). Based on these predictions, the next chapter turns to a pilot experiment investigating the production and interpretation of beginner, intermediate, and advanced L1 Spanish-L2 Basque learners.

CHAPTER 7: Pilot Study

This chapter presents a pilot experiment on the acquisition of the Basque auxiliary (AUX) and Case system by speakers of varying proficiency levels, including adult second language (L2) learners. The purpose of this experiment was to gather initial data pertaining to the research questions presented in the previous chapter, and discuss how the results compare with the predictions of syntactic versus morphological views of the challenge of inflectional morphology in second language acquisition (SLA). The complexities of the Basque AUX and Case system allow multiple paths of possible inquiry; the tasks reported here are designed to test a number of possible task types and elicit results to determine what might be investigated most fruitfully in future research.

Before introducing the experiment, it is important to note that the number of participants constitutes a serious limitation of this pilot study and hinders the generalizability of these results. This is a consequence of the small population of speakers and learners, as well as limited potential for data collection. Therefore, the results of this pilot are useful in that they inform an ongoing research agenda. As noted in Chapter 6, Basque is understudied in SLA research; thus, even though the overall number of participants in this study is small and proficiency groups are not balanced, the findings still contribute to the growing understanding of the behavior of both learners and native speakers of this language.

The structure of this chapter is as follows. Section 1 restates the research questions presented in Chapter 6, and summarizes the predictions of the two specific hypotheses under consideration: the Interpretability Hypothesis (IH) (Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007), and the Morphological Underspecification Hypothesis (MUH) (McCarthy, 2008; McCarthy, 2007). Section 2 introduces the pilot experiment tasks and

procedure. Section 3 presents the analysis and results of these tasks; Section 4 interprets and discusses these findings, limitations, and directions for future research. Section 5 concludes.

1 Introduction/Overview

This pilot study addresses the following research questions.

- (1) *AUX acquisition research questions*
 - a. Can L2 learners of Basque ultimately acquire the many complex forms of the present perfect AUX?
 - i. How does increasing proficiency correlate with the use of AUX?
 - ii. What is the influence of age and context of acquisition?
 - b. What aspects of the structure of AUX impact its acquisition?
 - i. Does a morpheme's status as a clitic (i.e., ERG, DAT or ABS doubled clitics) vs. agreement marker (i.e., v with ABS features Agree-Copied) play a role?
 - ii. What is the relationship between case morphology and the acquisition of AUX?

The first question, (1a), is a question of ultimate attainment. Noting that learners of many languages struggle persistently with inflectional morphology, it is questionable whether learners can demonstrate a native-like use of the Basque AUX at all, and if so, at what level of proficiency (1ai).

Regarding age of acquisition (AoA) (1a_{ii}), Basque is unique from more commonly studied L2s: in addition to its typological description, it is undergoing a process of revitalization. Part of this process is the availability of early immersion schooling for Spanish-speaking children. Thus, two groups emerge when participants are asked if they are 'native' Basque speakers: those who grew up with Basque-speaking parents (AoA = 0), and those who grew up with Spanish-speaking parents but were exposed to Basque in an immersion schooling context (AoA = 2-3). Thus, in addition to L2 learners whose acquisition process began after the so-called Critical Period (i.e., after the onset of puberty), there remains a question of whether the age of acquisition plays a role for 'native' speakers. The findings of Ezeizabarrena (2012) show that

effects of childhood AoA on DP Case marking and AUX production balance out by 8 years old; however, Zawiszewski et al. (2011) show that in adulthood, early-acquiring speakers (AoA = 2-3) are not as sensitive to ergative (ERG) Case marking violations as native speakers (NS) who were exposed to Basque from birth. Recall that according to Hawkins & Hattori (2006) the IH predicts that the NS and ESB group will behave indistinguishably, both having acquired the relevant uninterpretable features before the end of the critical period; their behavior will contrast with L2 learners who began acquiring Basque after puberty. Any native-like performance from L2 learners should be able to be attributable to the extension of L1 Case assignment patterns. Further discussion of participants' proficiency classification is offered in Section 2.1.

The second research question, (1b), explores how participants behave regarding specific linguistic constructs. The IH and the MUH make predictions in this regard that would offer evidence for a source of difficulty in the acquisition of inflectional morphology. Specifically, recall that the IH predicts equal difficulty with doubled clitics as with DP Case markers, in that both contain new uninterpretable Case features. On the other hand, the MUH predicts the overgeneralization of default (3rd Person singular absolutive (ABS)) features across the construction. Thus, for question (1bi), the MUH would predict equal difficulty with clitics as all agreement on AUX, while the IH would expect clitics to be more prone to error than the anchor. Regarding (1bii), the IH predicts an equally problematic relation with all new Cases, and thus equal difficulty with ERG and ABS clitics and case markers. While the MUH also expects these to be difficult, the challenge here is extended to include the Phi features of doubled clitics, dative (DAT) clitics and case markers, as well as the Phi features represented on the anchor of AUX.

Given the findings of related studies reported in the previous chapter along with the research questions and their relation to the IH/MUH presented here, the remainder of this chapter explores the structure of the pilot study and its findings.

2 Method

This section presents the methodology of the pilot study. Overall, this included five tasks: a language background questionnaire, a proficiency evaluation, a suppliance (fill-in-the-blank) task, a writing task, and a grammaticality judgment task (GJT). The entire task battery is available in Appendix A. As will be discussed, not all participants completed the entire five-task sequence. Results were included through the last task that a participant completed. For example, if a participant stopped the study halfway through the writing task (the fourth section), her results for the suppliance task were still analyzed. Although partial results do not offer a well-rounded picture of the individual participant, given the overall low number of participants it is important for the generalizability of results and for the assessment of task validity to include as many responses as possible for any given task.

2.1 Language Background Questionnaire and Proficiency Evaluation

The first two sections of this study were a language background questionnaire (LBQ) and a proficiency evaluation, the results of which combined to determine participants' proficiency level for subsequent classification during experimental tasks.

2.1.1 LBQ/Proficiency Participants

Overall, 32 participants either partially or entirely completed this study. Participants were divided into four groups based on their responses to the language background questionnaire and

proficiency test discussed below. These four groups included: native speaker (NS) ($n = 21$); early sequential bilingual (ESB) ($n = 8$)¹; L2 advanced (L2A) ($n = 1$); L2 intermediate (L2I) ($n = 2$).

Participants were between the ages of 18-58, with a median age of 20; 26 were female. The majority of participants ($n = 21$) were currently enrolled in undergraduate studies at a university in the Basque Country. In terms of educational experience, all participants had minimally attained a high school degree or its equivalent. The highest degree obtained among participants was a doctorate ($n = 1$). In addition to their proficiency in Basque, all participants reported native-like or near-native-like proficiency in Spanish, and all reported some familiarity with other languages (including English ($n = 27$), French ($n = 14$), and German ($n = 6$)).

2.1.2 LBQ/Proficiency Materials

The LBQ contained a total of 19 questions. The questionnaire began with demographic information (name, age, gender) and then moved to participants' educational background. These questions determined if participants were currently enrolled in school, and if so, at what level; they also determined the maximum level of schooling that participants had completed. The questions then moved to language background, asking participants to identify their native language, the age at which they began acquiring Basque and in what context; it also asked the language spoken by parents/caregivers during childhood. Participants were then asked to detail other languages they knew and to estimate their own proficiency levels; it was possible to enter up to four languages. Finally, questions assessed their use of Basque, including study habits, motivation for learning the language, and frequency/context of use outside of the classroom.

¹ The distinction between native speakers and early sequential bilinguals is made in the few SLA studies in existence on Basque (de la Cruz-Pavía, et al., 2014; Erdocia, Zawiszewski, & Laka, 2014; Rodríguez-Ordóñez, to appear; Zawiszewski, Erdocia, & Laka, 2010; Zawiszewski, et al., 2011; Zawiszewski & Laka, 2009) and is maintained in this study for full expository purposes. The precise determination of participants as NS or ESB is detailed in the following sections.

The proficiency assessment that participants completed was created by Rodríguez-Ordóñez (to appear) and used here with the creator's permission. The modified version used here consisted of 22 multiple-choice questions, each of which had 3 answer options. The questions were sourced from various proficiency levels of the standard Basque proficiency test, *Euskal Gaitasun Agiria* 'Certificate of Basque Literacy'.² Questions required participants to either select a word or phrase to complete a given sentence, or select a response to a given sentence.

2.1.3 LBQ/Proficiency Procedure

Before beginning the LBQ and proficiency test, learners read and signed an informed consent form, and read a summary of the tasks that the experiment entailed. The entirety of the study was computerized, made with online survey design software (www.surveymzmo.com). Participants had two options for completing the survey. First, they were invited to meet with the researcher and complete the study in-person; alternatively, participants were able to complete the survey online, at their own convenience and on their own device. There was no noticeable difference in the performance of participants who completed the survey with the researcher or on their own.

For participants who completed the study in-person, the study was presented on either a desktop or laptop computer in a quiet, private room in a university setting in the Basque Autonomous Community of Spain. The testing room could accommodate up to four participants at a time, although most were scheduled for an individual time slot. The environment for web-based participants is unknown.

² My research indicates that the EGA proficiency assessment is the only official assessment available. It is a multi-hour, multi-section exam that includes a preliminary test with lengthy reading passages, a speaking component, and a writing component. Although ideally such a test could be used to determine proficiency, such an exam is out of the realm of what could be asked of participants. Therefore, proficiency here is assessed using Rodríguez-Ordóñez's tool coupled with self-reported information from the LBQ.

After giving consent for participation, the first section of the experiment was the LBQ. The language of this questionnaire was Spanish; this decision was made to accommodate participants of all Basque proficiency levels. Participants were instructed to answer each question honestly. The questions appeared individually on the computer screen in a fixed order; after a question was answered, the software advanced to the next question. Due to limitations of the software, participants could not go back and revise answers once a question had passed.

Upon completion of the LBQ, the software automatically advanced to the proficiency task. In this section, instructions were presented simultaneously in both Basque and Spanish. The questions themselves were in Basque only. Participants completed this task by selecting the best possible answer from a list of 3 choices; once the answer was selected, the next question automatically appeared. Participants were not able to go back and revise answers once a question had passed. The survey software randomized these questions.

2.1.4 LQB/Proficiency Analysis and Results

The LBQ was analyzed by reading through participants' responses. The most useful information gathered by this instrument is participants' language background. Primary attention was paid to age of acquisition, context of acquisition (i.e., with family or in school), and home language. These factors were used in classifying participants into proficiency groups. Additional notes were made about other language experiences and daily habits in use of Basque.

The most pertinent results of the LBQ pertained to age of acquisition, context of acquisition, and home language; here, a few distinct groups emerge. There were two distinct groups of participants who considered themselves 'native speakers' of Basque. On the whole, the first group ($n = 21$) reports learning Basque from age 0, learning Basque at home (and in some cases, in school as well) with Basque-speaking parents and/or older siblings. As adults, most

report using Basque daily in as many interactions as possible with family, friends, in school, and in their daily business.

The second group ($n = 8$) reported learning Basque in early childhood; for most respondents in this group ($n = 5$), this was between ages 2-3, the age that most children begin pre-school in Spain (Cenoz, 2009). A few participants ($n = 3$) reported beginning to learn Basque between ages 4-6. Although there is admittedly a difference between the acquisition processes of a 2-year-old and a 6-year-old, these participants were included in one group due to the small sample size of this study. These participants all reported having Spanish-speaking parents and acquiring Basque in school. Their self-reported use of Basque as adults was lower than the group described above, averaging approximately 5.5 hours/week.

Therefore, this study will differentiate between these two groups; the first group, acquiring Basque from birth at home, are referred to as NS, while the second group, acquiring Basque from early childhood in school, are referred to as ESB, following the terminology of Rodríguez-Ordóñez (to appear). There is an empirical basis for maintaining this distinction: while Ezeizabarrena (2012) found that the accuracy in production of AUX and DP case marking was comparable between NS and ESB children by age 8, Zawiszewski et al. (2011) found that as adults, ESB acquirers were less sensitive to ERG Case marking violations than their NS peers. Given these conflicting findings and the relatively small amount of data available about learners of Basque, the distinction based on age and context of acquisition is maintained in this analysis.

Aside from NS and ESB participants, three participants reported learning Basque post-puberty, at the age of 18 or older. These participants listed Spanish as their native language, grew up in Spanish-speaking households, and either learned Basque in school or taught themselves. For the purposes of this study, these are the participants being considered L2 learners. This will

be addressed further in the discussion section, but it is worth noting here that this population ($n = 3$) is too small to offer results of any statistical significance, especially compared to the much larger NS/ESB population groups. Therefore, any trends exhibited by these learners are impressionistic and cannot be claimed to be representative of a typical learner of this proficiency level. However, given the limited number of studies that report on the acquisition of Basque beyond the Critical Period, the data here are still novel and worth consideration in the development of future Basque SLA research projects.

Turning to the proficiency test, these data were analyzed by comparing participants' responses to a given answer key. Participants were awarded one point for a correct response, and zero points for an incorrect response. The battery of questions used here is reduced from that used by Rodríguez-Ordóñez (to appear); in the original measure, there were 24 questions. In the present version, the number has been reduced to 22. Item analysis revealed that 75 percent or more of participants, including NSs, answered two questions incorrectly; Rodríguez-Ordóñez (p.c.) suspects that this might be the result of dialectal factors. These two items were eliminated to ensure that they did not obscure results based on possible variation.³

After participants' answers were scored and the item analysis was performed, proficiency was assessed based on total score achieved: beginners earned scores between 1-5; intermediate earned scores between 6-11; advanced intermediate earned scores between 12-17; advanced earned scores between 18-22. The results of the proficiency test show that the overwhelming majority of participants scored in the 'advanced' range on this measure. Full results are shown in Table 1.

³ The impact of eliminating these questions on participants' proficiency classification was minimal. One native speaker's proficiency level increased from upper intermediate to advanced; one L2 learner's proficiency level increased from intermediate to upper intermediate. The remaining 30 participants were unaffected.

Table 1. Proficiency test results

	Beginner	Intermediate	Upper Intermediate	Advanced
Number of Participants	0	0	2	30
Percentage of participants	0%	0%	6.25%	93.75%

Ultimately, learners were not classified on the basis of proficiency alone, but by proficiency score coupled with responses to selected questions from the LBQ. These included self-reported age of acquisition, parents' L1, and context of acquisition (e.g., at home, in school, etc.) This yielded the participant groups shown in Table 2.

Table 2. Participant population groups

	Mean proficiency test score	Age of Acquisition	Home language	Context of acquisition	Total Number
Native speakers (NS)	21/22 (Advanced)	0	Basque <i>or</i> Basque & Spanish	Home <i>or</i> Home & school	21
Early sequential bilinguals (ESB)	20/22 (Advanced)	2-6	Spanish	School	8
L2 Advanced (L2A)	19/22 (Advanced)	18+	Spanish	School	1
L2 Intermediate (L2I)	15/22 (Upper Intermediate)	18+	Spanish	School <i>or</i> self-taught	2

In sum, the combined results of the LBQ and proficiency test delineate four groups of participants for the present study. Three of these groups achieved an advanced-level score on the proficiency measure, but their self-reported language history warrants their division into three separate groups: NS, who began acquiring Basque from birth with Basque as a home language, ESB, who began acquiring Basque in childhood (ages 2-6) with Spanish as a home language, and L2A, who began learning Basque in adulthood. The fourth group consisted of L2I, who received an upper-intermediate score on the proficiency assessment and began learning Basque as adults.

An immediate limitation is the participant group size and balance. No group is large enough to offer results of statistical significance; further, the number of participants in the learner groups particularly is too small to yield anything more than impressionistic results of individuals' performances.⁴ However, the limited availability of data on Basque at any level of proficiency, particularly pertaining to L2 learners, merits the investigation and reporting of these results to inform further, more in-depth work with larger participant groups. Finally, while some studies do compare the impact of AoA on childhood Basque acquisition, very little is known about how these populations compare in adulthood. With these participant groups and motivations in mind, the remainder of this section presents the participants, materials, and procedures for the three experimental tasks. Analysis, results, and discussion are presented in Sections 3 and 4.

2.2 Task 1: Suppliance

The first of the experimental tasks was a suppliance task, in which learners were asked to supply a missing morpheme or AUX verb for a given sentence. The purpose of this task was to prompt learners to identify and produce the correct DP Case marker or AUX form based on other clues in the sentence.

2.2.1 Suppliance Task Participants

The suppliance task was completed by a total of 32 participants, described in detail in Section 2.1.1. Based on the proficiency categorization given above, this number included 21 NS, 8 ESB, 1 L2A, and 2 L2I. Ages ranged from 18-58, and 26 were female.

⁴ Personal communication with a linguist colleague with a background in statistics warns against performing any analyses on these results, as the small and imbalanced group size may offer false impressions. Any misinterpretation of guidance on statistics is my own responsibility.

2.2.2 Suppliance Task Materials

The suppliance task consisted of 44 questions that required participants to supply a missing morpheme or AUX form. Missing morphemes included ERG or ABS Case markers on both singular and plural full DPs ($n = 16$), present tense AUX forms ($n = 16$). Distractors ($n = 12$) asked participants to supply aspect marking on main verbs. All sentences were monoclausal transitives in the present perfect; all subjects and objects were full DPs (as Basque allows pro-drop) and were therefore 3rd Person. Subjects and objects were balanced for singular/plural (22 each). Examples are shown in Figure 1.⁵

Figure 1. Suppliance task sample questions

<u>Example: Case-Marking Suppliance</u>	
Gizon _____ emakumea ikusi du gaur 'The man has seen the woman'	ANSWER: <i>ak</i> (gizon-ak) (‘man-the.ERG’)
Marinelek ontzi _____ garbitu dute elkarrekin 'The sailors have cleaned the ship together'	ANSWER: <i>a</i> (ontzi-a) (‘ship-the.ABS’)
<u>Example: AUX Suppliance</u>	
Langileek etxeak margotu _____ goizean 'The workers have painted the house in the morning'	ANSWER: <i>dituzte</i> (AUX) (L-have.3S-3P.ERG)

2.2.3 Suppliance Task Procedures

This was the third section of the computer-based task. It directly followed the proficiency test, advancing automatically upon completion of that task. Upon beginning the suppliance task, participants were given instructions in both Spanish and Basque to complete the given sentence with the missing word or word ending. As training, they were shown an example of a missing Case-marking on a DP, with the correct case marker supplied in a textbox; this was followed by another example with a missing AUX with the correct answer shown in a textbox. In both cases,

⁵ English translations and glosses are included for convenience. Participants did not see this information in English or in Spanish, nor were they shown correct answers upon submitting their responses.

the sentence was ditransitive (the missing Case marker being DAT) in order to avoid focusing participants on any of the target Case markers and AUX forms.

After reviewing the examples, participants began the experiment. Responses were typed in a textbox under the given sentence. Upon submitting a response, the next question appeared. Participants were not able to go back and revise answers after progressing. The questions were presented in random order.

2.3 Task 2: Writing

The second experimental task was a writing task, the purpose of which was to elicit production of DP Case markers and AUX forms in a more naturalistic context. Coupled with the declarative knowledge obtained from the suppliance task, this task offers a more comprehensive picture of participants' understanding of obligatory production of DP Case marking and AUX.

2.3.1 Writing Task Participants

The writing task was completed by a total of 31 participants, all of whom also completed the suppliance task. One participant (NS) withdrew from the experiment before finishing this task. Based on the proficiency categorization given above, this number included 20 NS, 8 ESB, 1 L2A, and 2 L2I. Ages ranged from 18-58, and 25 were female.

2.3.2 Writing Task Materials

This task consisted of four writing prompts. The prompts were designed to elicit a higher number of 1st and 2nd Person singular and plural subjects, given that the DPs in the suppliance task were all 3rd Person. English translations of the prompts are given in Figure 2.

Figure 2. Writing task prompt

<u>Prompt</u>	<u>Subject elicitation</u>
Describe your daily routine.	<i>1st Person singular</i>
Pretend you are employer, and you have a new employee starting today. Explain to the employee what her responsibilities will be.	<i>2nd Person singular</i>
How do you and your family or friends celebrate your favorite holiday?	<i>1st Person plural</i>
Pretend you are a teacher addressing a group of students on the first day; tell them what they will learn about in your class.	<i>2nd Person plural</i>

2.3.3 Writing Task Procedures

This was the fourth section of the computer-based experiment. First, participants were given instructions on the same screen in both Spanish and Basque; they were instructed to write a brief paragraph of five to eight sentences in response to the prompt. Although Basque widely allows pro-drop, they were asked to try to include pronouns. Admittedly, this could encourage participants to produce sentences that they found pragmatically odd, though not technically ungrammatical. In many cases, participants disregarded this instruction and dropped pronouns anyway.

Before beginning the task, participants were given an example prompt in Basque; this prompt asked for a description of the participants' hometown. A simple five-sentence response in Basque, translated by a native speaker, was shown in a textbox.⁶ After reviewing the example, participants clicked to the next screen and were presented with the first prompt. The prompts were given in Basque only. Upon submitting a response, the next question appeared. Participants were not allowed to go back and edit a previous response after it was submitted. Prompts were presented in a random order.

⁶ This example included pronouns, but neither the native speaker materials translator nor any participants commented on this leading to pragmatically odd interpretations.

2.4 Task 3: Grammaticality Judgment Task

The fifth section of the computerized study was a grammaticality judgment task (GJT). The purpose of this task was to determine participants' ability to correctly identify errors in DP Case marking or in AUX form in a given sentence, and accurately accept correct sentences. The GJT differs from the suppliance and writing tasks in that it is a task of interpretation, not production. This task tested a variety of specific errors predicted by the IH and MUH, with the goal of offering insight into which morphological errors warranted further investigation.

2.4.1 GJT Participants

The GJT was completed by a total of 27 participants, all of who completed the suppliance and writing tasks. Four participants (NS) withdrew from the experiment before completing the GJT. Based on the proficiency categorization given above, this number included 16 NS, 8 ESB, 1 L2A, and 2 L2I. Ages ranged from 18-58, and 21 were female.

2.4.2 GJT Materials

The GJT included 80 sentences, 40 of which were grammatical and 40 of which contained either an error in DP Case marking, doubled clitic form, or AUX anchor morphology. Of these sentences, 16 were intransitive, 34 were transitive, and 30 were ditransitive; for each valency, half of the sentences were grammatical and half were not. These sentences were designed based on lists of intransitive, transitive, and ditransitive verbs given in standard Basque grammars (de Rijk, 2008; Hualde & Ortiz de Urbina, 2003), and included a variety of 1st, 2nd, and 3rd Person singular and plural subjects and objects. For each sentence, a modifier was included after AUX to avoid sentence-final position effects (Zawiszewski & Friederici, 2009). All sentences were reviewed by a native Basque speaker; some sentences were modified from

the stimuli of Zawiszewski & Friederici (2009), and were used with permission and gratitude.

The distribution of error type across the stimuli is shown in Table 3.

Table 3. GJT distribution by error type

Error Source	Error Nature	Error Description	Clausal context	Theory tested
<i>DP Case Marking</i> (<i>n</i> = 24)	Substitution (<i>n</i> = 16)	ERG Case on ABS DP (<i>n</i> = 8)	Intransitives, transitives	IH
		DAT Case on ABS DP (<i>n</i> = 4)	Ditransitives	IH
		DAT Case on ERG DP (<i>n</i> = 4)	Ditransitives	IH
	Omission (<i>n</i> = 8)	ERG Case omission (<i>n</i> = 4)	Transitives	IH/MUH
		DAT Case omission (<i>n</i> = 4)	Ditransitive	IH/MUH
<i>AUX</i> (<i>n</i> = 16)	Substitution (<i>n</i> = 16)	3s agreement on anchor (<i>n</i> = 8)	Intransitive, transitives	MUH
		3s ERG clitic (<i>n</i> = 5)	Transitives	IH/MUH
		3s DAT clitic (<i>n</i> = 3)	Ditransitives	MUH
<i>Grammatical</i> (<i>n</i> = 40)	No error	<i>n</i> = 40	Intransitives, transitives, ditransitives	

Table 3 shows that in ungrammatical sentences, errors appeared either in DP Case marking, or in the form of AUX. In DP Case marking, two error types were possible. The first were errors of substitution, in which the wrong Case marker was affixed to a DP in a particular argument position. The other error type was omission, in which a Case marker was left off of a DP; it should be noted that this could also be interpreted as an error of ABS substitution in some instances. For both Case error types, evidence for the correction came from AUX.

In AUX production, only errors of substitution were included, as errors of omission would lead to unattested AUX forms. These errors were overgeneralization of 3rd Person singular features on clitics and the anchor of AUX; evidence for the correct AUX form was available from DP Case marking.

The task was originally designed with 100 stimuli; after testing, 20 items were rejected. Elimination of stimuli was first due to item analysis; any stimuli where 75 percent or fewer NS participants agreed with the intended coding were rejected ($n = 12$). The remaining 8 eliminated stimuli were removed to balance out error and valency groups. Elimination criteria included item analysis scores compared to other stimuli of the same type (81.25 percent - 85.5 percent), or the nature of corrections participants provided (multiple possible corrections, valency changes).⁷

2.4.3 GJT Procedures

The GJT was the fifth and final section of the computer-based experiment. Participants were given instruction in both Basque and Spanish to rate the question on a Likert scale of 1-5; a score of 1 was ‘completely unacceptable’, while 5 was ‘completely acceptable’. For any sentence rated 3 or below, participants were asked to provide a correction of the error. The purpose of this was to determine if the rejection was based on Case/AUX inaccuracies or another factor (e.g., lexical choice, word order). After viewing these instructions, participants began reviewing the questions. No training items were given, due to the overall duration of the experiment. The setup for the scale and correction textbox is shown in Figure 3.

Figure 3. Sample GJT question

The screenshot shows a computer interface for a Grammatical Judgment Task (GJT) question. At the top, there is a title in Basque: "Nik azkar etorri naiz etxetik*". Below the title is a Likert scale with five points. The first point is labeled "1 - Completamente inaceptable" and the fifth point is labeled "5 - Completamente acceptable". Each point has a radio button next to it. Below the scale is a large, empty rectangular text box for providing corrections. The interface is enclosed in a thin black border.

⁷ Further use of the instrument developed here would make additional changes to the remaining stimuli, based on participants’ feedback on word order, spelling, and multiple possible corrections.

After a response was submitted, the next question automatically appeared. Participants could not go back and change a response once it was submitted. Questions were presented in random order.

Upon completion of the GJT, participants were informed that they had completed the experiment and were thanked for their participation. Participants were paid upon completion of the entire study. For in-person participants, the entire experiment took between 45-90 minutes to complete, based on proficiency. Most participants completed the study in 75 minutes or less.

3 Analysis/Results

This section presents the analysis procedures and results for the three experimental tasks: the suppliance task (Section 3.1), the writing task (Section 3.2), and the GJT (Section 3.3).

3.1 Task 1: Suppliance

Recall that the suppliance task asked participants to provide the appropriate singular or plural ERG or ABS Case marker on a DP, or to provide the appropriate AUX, for a given sentence. All sentences were monoclausal transitives, and all subjects and objects were full DPs.

3.1.1 Suppliance Task Analysis

The analysis procedure for the suppliance task was as follows. Based on a report generated by the survey software, participants' responses were compared to the intended Case marker or AUX. A native Basque speaker reviewed the intended responses during material development. Distractors, which asked participants to provide verbal morphology, were eliminated.

Each participant produced 32 tokens, 16 eliciting DP Case makers and 16 eliciting AUX verbs.⁸ Participants' responses were scored in comparison to the intended responses. Each correct response received one point; each incorrect response received zero points.

3.1.2 Suppliance Task Results

Participants' accuracy in Case-marker and AUX suppliance is shown in Table 4.

Table 4. Suppliance task results by proficiency level

		DP Case Marker	AUX	TOTAL
Native Speakers (<i>n</i> = 21)	Mean % Correct	93.2%	89%	91.9%
	SD	1.97	2.34	4.11
	Total <i>n</i> tokens	336	336	672
Early Sequential Bilinguals (<i>n</i> = 8)	Mean % Correct	97.7%	92.2%	94.9%
	SD	1.69	0.74	1.16
	Total <i>n</i> tokens	128	128	256
L2 Advanced (<i>n</i> = 1)	Mean % Correct	100%	100%	100%
	SD	-	-	-
	Total <i>n</i> tokens	16	16	32
L2 Intermediate (<i>n</i> = 2)	Mean % Correct	96.9%	100%	98.4%
	SD	0.71	0.71	0
	Total <i>n</i> tokens	32	32	64

Considering first the role of proficiency, Table 4 shows that the NS were the least accurate group; this trend holds for the suppliance of both DP Case markers and AUX. However, calculation of the skewness (-3.25) for this group suggests that there is not normality among the scores, and therefore the results cannot be considered to be indicative of performance of a

⁸ Regarding AUX production, it should be noted that the overwhelming majority of tokens produced were in the present tense (98 percent). The remaining 2 percent (9 tokens total) produced were past tense; these answers were not considered incorrect based on tense. Additionally, while 99 percent of the AUX tokens produced were monotransitive as expected, 1 percent (4 tokens total) were ditransitive and assumed a null indirect object. An informant deemed this grammatical, and these tokens are considered correct if the proper doubled clitics and anchor forms are produced for the given DPs.

population.⁹ Rather, the patterns here can only be understood as trends worthy of further investigation with a larger sample size.

The most accurate ‘group’ was the L2A individual, though ceiling-level scores were also achieved by NS ($n = 5$), ESB ($n = 3$), and L2I ($n = 1$). The L2A individual’s performance cannot be considered representative of a larger population of learners of this level; however, it does demonstrate what a learner of this proficiency can ultimately achieve. The L2I learners also demonstrated higher accuracy than ESB and NS participants, but again due to small sample size these results can only demonstrate individuals’ potential on this particular measure and cannot be considered indicative of a broader trend. Finally, on average ESB learners out-performed their NS counterparts.

An analysis of individual NS and ESB participants’ performance on this task does suggest that ultimately, the lower average NS scores can be attributed to one individual. On this task, six NS (29 percent of the population) scored at ceiling, the remaining NS participants scored within one SD of the mean, and one scored four SDs below the mean. This individual showed less than 50 percent accuracy across all question types; removal of this participant from the pool yields the following overall distribution.

Table 5. Suppliance Task: NS results excluding possible outlier

		DP Case Marker	AUX	TOTAL
Native Speakers ($n = 20$)	Mean % Correct	95.6%	91.56%	93.6%
	SD	0.80	1.42	1.85
	Total n tokens	336	336	672

⁹ This skew is likely due to the inclusion of a single individual; disqualification of this participant brings the overall standard deviation down to 1.85 (comparable to the ESB group), and reduces skew (-0.59) greatly. However, due to the small sample size it is impossible to know if the outlying participant’s results are within the range of normal for native speakers. As little data is available from other studies to clarify this issue, the participant is not excluded from the analysis here.

The results in Table 5 show that, while the NS group is still the least accurate group overall, the removal of the outlier reduces the SD for both question types, and overall, to a level that suggests comparability with the other groups. More participants are needed to determine whether or not this individual's behavior can be expected of NS more broadly, so although this divergence from the rest of the group suggests a possibly atypical performance, the results of this speaker are included for the remainder of the discussion.

In comparison, three ESB speakers (38 percent of the population) scored at ceiling on this task, with the majority of the rest scoring within one SD of the mean, and one individual scoring just below within two SD of the mean. This suggests that no outlier exists in this group as seen in the NS group, and that the distribution of scores within these groups is somewhat comparable. See Appendix B for the full details of individuals' performances. Further, consideration of the median scores of these two groups presents a somewhat different picture.

Table 6. NS/ESB median performances

	DP Case Marker – % Correct	AUX – % Correct	Total – % Correct
Native Speakers (n = 21)	93.8%	93.8%	93.8%
Early Sequential Bilinguals (n = 8)	100%	90.6%	93.8%

Keeping in mind the small, unbalanced sample size and the large difference in standard deviation between the two groups, the median accuracy scores shown in Table 6 suggest that the performances of NS and ESB participants may be ultimately comparable; both show a median overall accuracy score of 93.8 percent. While the NS median shows consistent performance despite type (Case marker vs. AUX), the ESB median shows ceiling accuracy with DP Case markers and less accuracy with AUX suppliance than the NS group.

Turning to the influence of error type, the results in Table 4 show that on average both NS and ESB groups were less accurate in the suppliance of AUX than in the suppliance of DP

Case markers. No difference is observed for the L2A individual, and the L2I pair shows more difficulty with Case markers suppliance than AUX suppliance.

Overall accuracy scores are supplemented by investigation of the nature of the few errors learners did produce; the following discussion considers the number of errors produced by each group as a whole. **Table 7** looks at DP Case marker suppliance; errors in Case marker production are categorized as related to Case (e.g., substitution of a plural ERG Case marker in a plural ABS context), related to Number (e.g., substitution of a plural ERG Case marker in a singular ERG context), or ‘other’ (e.g., verbalization of a given DP). For singular objects, the erroneous production of the morpheme /ak/ is ambiguous between singular ERG Case marking (a Case violation) and plural ABS marking (a Number violation). Table 8 looks at AUX suppliance errors. There were no errors involving Person features observed for either ABS or ERG arguments. Therefore, errors are categorized as ERG clitic Number errors, anchor Number errors, or other (e.g., ambiguous typos). Finally, Table 9 looks at the type of erroneous substitutions made in Case marker and AUX suppliance, specifically looking at the feature value of the substitution. Both tables show the overall percentage of errors by type; the numbers in parentheses are the number of error tokens of this type. To clarify, the figures in these Tables offer a breakdown of the total errors made; that is, for example, in **Table 7**, for the 11 errors that NS made with DP Case markers on subjects, 6 of those errors (55%) involved Number.

Table 7. DP Case marking errors by type

	SUBJECT			OBJECT			TOTAL		
	Case	Number	Other	Case	Number	Other	Case	Number	Other
NS	27% (3)	55% (6)	18% (2)	16.7% (2)	25% (3)	33.3% (4)	21.7% (5)	39.1% (9)	26.1% (6)
ESB	33.3% (1)	33.3% (1)	33.3% (1)	-	-	-	33.3% (1)	33.3% (1)	33.3% (1)
L2A	-	-	-	-	-	-	-	-	-
L2I	-	-	-	-	100% (1)	-	-	100% (1)	-

Table 8. AUX errors by type

	ERG – Number	Anchor – Number	Other
Native Speakers	66.7% (26)	28.2% (11)	5.1% (2)
Early Sequential Bilinguals	80% (8)	20% (2)	-
L2 Advanced	-	-	-
L2 Intermediate	-	-	-

Table 9. Characterization of substitution

	DP Case Marking				AUX			
	Case		Number		ERG clitics		Anchor	
	ABS for ERG	ERG for ABS	DAT for ABS	PL for SG	SG for PL	PL for SG	SG for PL	
NS	21.4% (3)	-	14.3% (2)	7.1% (1)	57.1% (8)	43.2% (16)	21.6% (8)	
ESB	50% (1)	-	-	50% (1)	-	50% (5)	20% (2)	
L2A	-	-	-	-	-	-	-	
L2I	-	-	-	-	100% (1)	-	-	

First, considering the overall errors in DP Case marking in **Table 7**, NS participants produced more Number violations than Case violations; the single error produced by an L2I learner was also an error of Number. The NS group produced errors on both subject and objects. While ESB participants produced equal Case and Number violations on subject DPs, no errors were observed on object DPs. Turning to the AUX errors in Table 8, only Number violations were observed; these errors were limited to the NS and ESB groups and occurred more frequently with ERG doubled clitics.

Finally, consider the characterization of the substitutions in Table 9. Looking first at Case marker substitutions, these more frequently involved Number features than Case features. When Case-based substitutions were observed, both NS and EBS substituted an ABS marker for an ERG marker, but only NS substituted a DAT marker for an ABS marker. Turning to Number substitutions in Case markers, NS substituted singular Case markers in a plural context more than plural in a singular context; the only Number-based Case marker error for ESB was the reverse, substituting a plural in a singular context. The only L2 error patterned like the NS group, substituting a singular Case marker in a plural context.

Turning to AUX morpheme substitutions and looking first at errors in ERG doubled clitic production, both the NS and ESB groups substituted plural ERG clitics in singular contexts more frequently than the singular clitic in a plural context. Looking at the anchor of AUX, the reverse was observed, with the singular anchor substituted in plural contexts more by both groups than vice versa.

Section 3.1 has introduced the analysis procedure and results for the suppliance task. Results looked at effects by proficiency level and by error type. These results must be viewed with caution for two reasons: first, the group populations are small and uneven. The performance

of L2 learners cannot be considered indicative of these groups as a whole, but rather demonstrates individuals' potential on this particular measure. However, both L2A and L2I show high potential for nativelike performance, scoring either near or at ceiling-level regardless of morpheme type. Second, the large skew in the NS group's scores and the difference in the standard deviations of the NS versus ESB groups further limits both the generalizability of the observed patterns and the comparison of participant behavior.

Trends in error production are limited to NS and ESB groups. First, while NS errors were more evenly distributed between DP Case markers and AUX morphology, ESB errors were concentrated on the AUX form, with the majority of errors pertaining to the production of ERG doubled clitics. When ESB participants did produce Case-related errors, these were the result of the Number feature of the Case marker and not its Case feature. The NS group also showed more errors with Number features than Case features in Case marker production; Number was also the main source of ERG clitic errors on AUX. Number feature errors did not trend toward one feature value; that is, the NS group substituted both plural for singular and singular for plural. The implications of these findings are discussed in Section 4 below.

3.2 Task 2: Writing

This section discusses the result of the second production task, which asked participants to give written responses for four prompts. Given that the suppliance task dealt exclusively with 3rd Person full DPs, the prompts were designed to elicit 1st/2nd singular and plural arguments.

This section details analysis procedure and results of this task.

3.2.1 Writing Task Analysis

The procedure for the analysis of the writing task is as follows. For every answer, the researcher identified every instance of AUX produced; a native Basque speaker reviewed the

selection to ensure that no instances of AUX were overlooked. Four native Basque speakers performed coding; for every identified instance of AUX, coders were asked to identify the aspects of the sentence in which it appeared illustrated for the sentence *Nik zuri liburua eman dizut* ‘I have given the book to you’ in Figure 4.

Figure 4. Coding scheme – writing task: “Nik zuri liburua eman dizut”

AUX Supplied	dizut
AUX Correct for context? Y/N	Y
If N, what is correct?	
What is subject	Nik
Subject Pronoun Y/N	Y
If Y, included/omitted?	included
Subject Marking	ERG
Subject Marking Correct? Y/N	Y
If N, what is correct?	
What is object	liburua
Object Pronoun Y/N	N
If pronoun, included/omitted?	
Object Marking	ABS
Object Marking Correct? Y/N	Y
If N, what is correct?	
What is indirect object	zuri
IO Pronoun Y/N	Y
If pronoun, included/omitted?	included
IO Marking	DAT
IO Marking Correct? Y/N	Y
If N, what is correct?	

Inter-rater reliability in coding was calculated as follows: rater #4 (a native Basque-speaking linguist) reviewed 18 percent of the AUX tokens coded by raters #1, #2, and #3 (native Basque-speaking undergraduate students). Overall agreement was 90 percent.¹⁰

¹⁰ Reliability with rater #1 was 92.4 percent; reliability with rater #2 was 91.5 percent; reliability with rater #3 was 79.8 percent. Due to the discrepancy between raters #3 and #4, the researcher reviewed the analysis of rater #3 and corrected obvious coding errors (e.g., inclusion of overt pronouns that were marked ‘omitted’). These corrections were reviewed by rater #4; the revised

After inter-rater reliability was calculated to ensure the validity of the coders' analysis, the dataset was reduced. Overall, the 31 participants produced 768 instances of AUX. As the focus of the present analysis is intransitive, transitive, and ditransitive AUX in present perfect indicative contexts, all instances of AUX that were not present indicatives were discarded (though non-perfective verbs were kept, as this did not influence the form of AUX); applicative intransitives were discounted as well, due to the limitations of the analyses in Chapters 3 and 4 to account for the full range of these constructions. These data are coded and await future analysis. This brought the number of AUX tokens to 624, which raters judged as correct or incorrect.

In addition to being rated on the AUX forms produced, participants were also scored for their accurate production of subject, direct object, and indirect object arguments. As Basque allows pro-drop, participants could not be penalized for not overtly producing an argument; nor could they be awarded credit for 'correctly' producing a pro-dropped argument. Therefore, only overt subject, direct object, and indirect objects were identified and evaluated as correct or incorrect. This yielded 107 overt ERG subjects, 112 overt ABS subjects, 322 overt (ABS) objects, and seven overt (DAT) subjects. Adding the AUX forms, the total number of tokens scored was 1,172.

Several types of arguments identified by the raters were excluded from the present analysis to ensure that the focus remained on canonical, monoclausal structures. Arguments that did not have ABS, ERG, or DAT Case marking (e.g., instrumental, partitives, locatives) were not counted, nor were relative clauses, as the analysis of Chapters 3 and 4 does not address case,

and reviewed coding was ultimately used in the analysis. If rater #3 is discounted, inter-rater reliability rises to 92 percent.

Ideally, raters #1-3 would be able to review 20 percent of the data coded by the other three raters as well, and a fifth rater could be recruited to look over rater #3's work, but this was not possible due to time constraints and rater availability.

licensing, and the relation between such arguments and AUX. Overall, approximately 12 percent of ‘transitive’ AUX were analyzed as not having a direct object at all, pro-dropped or otherwise. These were doubled-checked by a rater: the majority were unergatives (some of which are underlyingly intransitive, per the analysis in the previous chapters); also included were weather predicates, which take the transitive AUX, and covert object DPs available from the pragmatics. Objects were not assessed these cases. The justification for including object-less ‘transitive’ AUX forms was that they are instances of accurate production of inflectional morphology, and thus representative of participants’ knowledge and abilities. Further investigation into these tokens could reveal if participants showed a difference in the production of default inflectional morphology versus that which results from underlying agreement. Finally, there were three instances in which ditransitives were coded as lacking a direct object; two of these were confirmed to be instances of bivalent ditransitive verbs (Etxepare, 2003) and one was an example of Differential Object Marking. Participants were not given credit nor were penalized for lack of direct object with a ditransitive AUX in these cases.

To score participants’ output, the researcher reviewed the raters’ analysis and identified the 1,172 tokens to be further assessed. Every token was worth a possible one point. Participants received one point for every correct response and zero points for an incorrect response, as judged by the raters.

3.2.2 Writing Task Results

One challenge in the analysis of naturalistic linguistic data is that participants’ responses cannot be directly compared as they can be in experimental tasks. For example, there was a wide range in the number of tokens produced both within and between groups; the range for the NS group was 12–80; for the ESB group, 21–72; for the L2A individual, 21 tokens were produced;

and for the L2I pair, one participant produced 30 tokens while the other produced 61. Given the disparate number of participants in the different groups, the total number of tokens produced overall is also a wide spread: NS produced 706 tokens total; ESB produced 354 total; L2A produced 21; L2I produced 91.

Bearing this disproportion in mind, scores will be discussed in terms of mean percentage of accurate responses, grouped by proficiency level. This is shown in Table 10.

Table 10. Writing task: Overall accuracy by proficiency level¹¹

		Overall	AUX	Subject marking	Object marking	Indirect Object marking ¹²
Native Speakers (<i>n</i> = 16)	Mean %	99.86%	100%	99.01%	100%	100%
	Median %	100%	100%	100%	100%	-
	SD ¹³	0.01	0.00	-	0.00	-
Early Sequential Bilinguals (<i>n</i> = 8)	Mean %	98.02%	100%	92.39%	100%	100%
	Median %	98.63%	100%	94.4%	100%	-
	SD	0.02	0.00	0.14	0.00	-
L2A (<i>n</i> = 1)	Overall %	95.24%	92.31%	100%	100%	-
L2I (<i>n</i> = 2)	Mean %	92.31%	86.96%	95.24%	100%	100%
	SD	0.06	0.13	0.06	0.0	-

As Table 10 shows, the NS group was highly accurate in their mean production of AUX and Case marking, as expected. The ESB group also scored at near-ceiling level, although slightly less accurate overall than NS; this can be attributed to errors in subject Case marking. Individual analysis of NS and ESB participants' performance on this task (Appendix B) show that the NS group was consistent in their performance – a single error came from single participant, and

¹¹ Note that due to the small number of L2 participants, mean and median could not be calculated for all groups.

¹² When mean and median token number is zero, percentage of accurately produced cannot be calculated. Total indirect objects are produced are: NS: 5/5 (100 percent); ESB: 1/1 (100 percent); L2A: 0/0; L2I: 1/1 (100 percent).

¹³ Standard deviations (SD) could not be calculated for all types because not all participants produced an example of every type. SDs are only available for those types for which every participant in the group produced at least one token.

cannot be taken as evidence of a deficiency in the underlying grammatical representation. In the ESB group, 50 percent of participants performed at ceiling like the NS group, while the remaining 50 percent scored within one SD of the mean. No participant in this group made more than two errors overall, though interestingly all errors pertained to subject marking. The L2A individual performed slightly less accurately than the ESB and NS groups overall, though unlike the ESB group, she made no errors with Case markers at all. Finally, the L2I pair was the least accurate overall; though few errors were made overall, they appeared both in AUX production and in subject DP Case marking.

Regarding comparability, it is worth restating that the disparity in number of participants at each proficiency level severely limits the ability to make any generalizable statement about the comparability of these groups. However, note that the overall standard deviations (SD) reported for these groups are relatively close (NS SD = 0.01, ESB SD = 0.03, L2I = 0.06), suggesting that preliminary comparisons can be made, though any claims need to be re-tested with a larger, more balanced sample set. Therefore, the results discussed here should only be considered preliminary trends, noting the potential patterns for individual behavior.¹⁴

Although very few errors were made overall by participants of all levels, both AUX and DP Case marking errors can be further analyzed. First, consider errors in AUX production, further categorized in Table 11.

¹⁴ The NS group in this task shows more normality than in the suppliance task, with skewness = 1.32. One factor that might have contributed to the difference in this group between the suppliance task and the writing task is the withdrawal of one participant after completing the suppliance task.

Table 11. AUX error analysis – percentage of mean accurate responses

	Intransitive AUX	Transitive AUX¹⁵	Ditransitive AUX
NS	100%	100%	100%
ESB	100%	100%	100%
L2A	85.71%	100%	-
L2I	100%	75%	87.5%

First, note that both NS and ESB were entirely accurate in every instance of AUX production, regardless of AUX type. Turning to groups that did show errors, for the L2A individual, errors were limited to intransitive forms; she was completely accurate with transitive AUX and did not produce any ditransitive constructions. Looking even more closely, the error can be characterized as follows: the L2A individual made a single error in the seven intransitive AUX she produced. Interestingly, the error was one of Number agreement with the subject, with the correct argument structure: a 1st Person plural intransitive AUX (*gara*) was produced, where the 1st Person singular (*naiz*) was required.

The L2I pair produced errors with transitive and ditransitive AUX types; intransitives were entirely accurate. Ditransitives were more accurate than transitives for this pair, though there were eight ditransitive tokens compared with 20 transitive AUX.

Errors in transitive AUX were observed in five cases of the 20 tokens produced. For one participant, errors were seen in the Number value of the morphemes selected: one instance of substitution of the 3rd person plural anchor for the 3rd Person singular (**dituzue*, for *duzue*), and one instance of the 2nd Person plural ERG clitic for the 2nd Person singular ERG clitic (**duzue*

¹⁵ Recall from above that those AUX categorized as ‘transitive’ do include instances of unergatives, which in some cases were analyzed as underlyingly intransitive in previous chapters. The use of the label ‘transitive AUX’ here is used for convenience to refer to an AUX that includes an ERG clitic (but not a DAT one), as was discussed in Chapter 5. The point in including unergatives in the ‘transitive’ AUX category is that these are still instances of the production of inflection on the anchor of AUX, though the default values are inserted post-syntactically. Investigation of the production of inflectional morphology needs to take into account all possible instances of production.

for *duzu*). For the other participant, on three separate occasions the 1st Person singular ERG clitic was not included in AUX (**ditu* for *ditut*). This could be viewed as an error of omission of the clitic, or substitution of the 3rd Person singular ERG clitic, which is null. For the ditransitives, the only error of eight tokens produced involved the omission of a DAT clitic, where the 3rd Person plural clitic was required (**dizki* for *dizkie*). Unlike the ERG clitic discussed above, this is a clear case of omission as there are no null DAT clitic forms.

Case marking errors are analyzed further in Table 12.

Table 12. Case marking error analysis – percentage of mean accurate responses

	Subject		Direct Object (ABS)	Indirect Object (DAT)
	<i>ERG Subject</i>	<i>ABS Subject</i>		
NS	100%	98.36%	100%	100%
ESB	90.38%	95.0%	100%	100%
L2A	100%	100%	100%	-
L2I	92.31%	100%	100%	100%

Considering overall performance first, note that all proficiency levels were completely accurate in their production of ABS Case marking on direct objects and DAT Case marking on indirect objects. Looking at overall subject production, the L2A individual was entirely accurate, while the NS group and the L2I pair each yielded a single Case marking error. In comparison, the ESB group produced multiple errors in the Case marking of both ERG subjects ($n = 3$) and ABS subjects ($n = 2$). Although the overall number of errors is small for the 185 DP arguments produced by the ESB group, the nature of the errors is worth further analysis.

In the NS group, Case marking overall was highly accurate except for a single error in the case marking of the subject of an intransitive. This was an instance of the overgeneralization of the ERG Case marker to an ABS DP (**zuk* for *zu*). In the ESB group, the nature of the ABS error was the same: the ERG Case marker was affixed to an ABS subject (**nik* for *ni*, in both cases, by two different participants). For ERG subjects, the errors could be viewed as either omission of

the ERG Case marker or substitution of an ABS Case marker. Of the five errors produced by the ESB group on objects, two were on pronouns (**ni* for *nik*; **zu* for *zuk*), and three were on conjoined subjects: (**nik eta nire familia* ‘I and my family’ for *nik eta nire familiak*, produced by two different participants, and **nire ahizpak et ni* ‘my sister and I’ for *nire ahizpak eta nik*). Finally, the single error produced by the L2I pair involved either a missing ERG Case marker or the substitution of an ABS Case marker (**zu* for *zuk*), which was observed in a raising construction with *behar* ‘must’.

This section has reviewed the results of the writing task. In the selected set of tokens, overall production was highly accurate regardless of proficiency. For the NS and ESB groups, AUX production was entirely accurate; errors were observed for both groups in the substitution of an ERG Case marker on the ABS subject of an intransitive. Further Case marking errors were produced by the ESB group involving the omission of the ERG Case marker (or the overgeneralization of an ABS Case marker) on the subject of a transitive clause. A similar error with ERG subjects was produced in the L2I pair.

Turning to AUX production, the NS and EBS groups were entirely accurate while L2 learners of both levels produced errors. The L2A individual produced a single error in Number agreement between the AUX and an intransitive subject (substituting plural for singular). The L2I group was entirely accurate in intransitive AUX production, but showed errors of ERG clitic omission and in Number agreement between the ERG clitic and the ERG subject; these also involved the substitution of plural features for singular. Finally, the L2I group produced a single error in ditransitive AUX production, involving omission of the DAT clitic. The implications of these findings for the IH and MUH are addressed in Section 4.

3.3 Task 3: Grammaticality Judgment Task

This section discusses the analysis and results of the final experimental task, the GJT, which asked participants to rate sentences on a Likert scale of 1-5, from ‘completely unacceptable’ to ‘completely acceptable’. For scores of 3 or below, participants were asked to provide a correction for the error(s) they observed.

3.3.1 GJT Analysis

The analysis of the GJT was based on a point-assignment system. The goal of analysis was to establish two numbers: the overall percentage of sentences, and the overall percentage of sentences accepted. Rejection of an item, qualified as a rating of 3 or below with an acceptable correction, earned one point; acceptance of an item, qualified as a rating of 4 or 5 with no correction, earned 0 points.¹⁶ If a sentence was rated 3 without a correction, it was removed from consideration for that participant. If a participant assigned an ‘unacceptable’ rating of 1 or 2 but provided an ungrammatical correction, the item was removed from consideration for that participant. Finally, if a participant assigned an ‘acceptable’ rating of an ungrammatical sentence but offered an acceptable correction, the item was awarded 1 point as the correction was indicative of grammatical knowledge.

Based on this point assignment, the total percentage of rejected and accepted sentences was calculated, regardless of the accuracy of the response. Accuracy was calculated by looking at these percentages by question type: for ungrammatical sentences, the percent rejected was the percent accurately judged; for the grammatical sentences, the percent accepted was the percent accurately judged.

¹⁶ At first glance it might seem that this rating system incorrectly penalizes participants for accepting a grammatical sentence. However, post-scoring analysis allows for the presentation of results in terms of accuracy based on grammaticality: the percentage of unacceptable sentences accurately rejected is compared to the percentage of acceptable sentences accurately accepted.

3.3.2 GJT Results

The GJT consisted of three main item types: those with an error in AUX morphology, those with an error in Case marking on the DP, and those that were grammatical. Table 13 shows overall accuracy in rejecting/accepting these sentences, broken down by proficiency level.

Table 13. GJT accuracy by proficiency level

		DP Case marking error (rejected)	AUX morphology error (rejected)	Grammatical (accepted)
NS (n = 16)	Mean % Accuracy	96.35%	98.83%	93.44%
	SD	0.03	0.01	0.02
ESB (n = 8)	Mean % Accuracy	84.9%	96.09%	92.81%
	SD	0.1	0.05	0.03
L2A (n = 1)	Mean % Accuracy	78.85%	93.75%	95%
	SD	0.14	0.1	0.06
L2I (n = 2)	Mean % Accuracy	77.27%	87.5%	91.25%
	SD	1.9	0.09	0.03

Table 13 shows that for both error types (DP Case marking and AUX morphology), accuracy increases as proficiency increases. The L2A individual was most accurate in accepting grammatical sentences, but accuracy increased with proficiency for the three remaining groups. However, as with previous tasks, the fact that the participant groups were not comparable in size must be taken into consideration; the correlation between accuracy and proficiency observed here cannot be considered to be generalizable to these groups on a larger scale. While SDs are comparable for the NS and ESB groups across tasks, there is noticeable divergence from L2 learners SDs in most cases, which calls into question any comparison of performance by proficiency level.

Looking at accuracy by type within groups, NS were most accurate in rejecting AUX morphological errors, while they were least accurate in accepting grammatical sentences. Individual analysis of participants' performance (Appendix B) suggests that within-group performance overall was comparable; one participant scored at ceiling, the majority scored within one SD of the mean, and one scored within two SD of the mean. When accuracy was examined by type, none of the individuals demonstrated particularly striking patterns. The ESB group was also most accurate in rejecting incorrect AUX forms, but unlike the NS group was least accurate in rejecting DP Case marking errors. In the individual analysis of this group, all but one individual scored within one SD of the mean overall; this participant's score can be attributed to a noticeable difficulty with DP Case marking (52 percent accuracy overall). However, without more participants, this cannot be claimed to be an atypical performance.

The L2A individual was most accurate in accepting grammatical sentence; she was least accurate in rejecting DP Case marking errors. The L2I pair was most accurate in accepting grammatical sentences, though they were the least accurate of the four levels with errors of this type overall. Like the ESB group and L2A individual, they were least accurate in rejecting DP Case marking errors.

It should be noted that for the grammatical sentences, the majority of rejections were based on non-Case or –AUX related factors. Recall that participants were asked to provide corrections for sentences deemed ungrammatical; the corrections suggest that acceptable sentences were rejected for a variety of reasons, including word order preferences (as Basque

allows free word order) and spelling.¹⁷ These corrections will be discussed in further detail below.

Looking at the item types in further detail, within the DP Case marking category, there were two error types: substitution or omission. Consider first errors of substitution, shown in Table 14.

Table 14. DP Case marking: % accuracy with errors of substitution

		*ERG Case /k/ on ABS DP (n = 8)	*DAT Case /ri/ on ABS DP (n = 4)	*DAT Case /ri/ on ERG DP (n = 4)	Overall accuracy (n = 16)
NS	<i>Rejected</i>	96.09%	100%	93.75%	96.48%
	<i>Accepted</i>	3.91%	0%	6.25%	3.52%
	<i>Discounted</i>	0%	0%	0%	0%
ESB	<i>Rejected</i>	89.06%	93.75%	90.63%	90.63%
	<i>Accepted</i>	10.94%	0%	0%	5.47%
	<i>Discounted</i>	0%	6.25%	9.38%	3.91%
L2A	<i>Rejected</i>	100%	75%	75%	87.5%
	<i>Accepted</i>	0%	25%	25%	12.5%
	<i>Discounted</i>	0%	0%	0%	0%
L2I	<i>Rejected</i>	93.75%	87.5%	62.5%	84.38%
	<i>Accepted</i>	6.25%	0%	37.5%	12.5%
	<i>Discounted</i>	0%	12.5%	0%	3.13%

The overall accuracy in rejection of DP case marking of errors of substitution increases as proficiency increases. For NS, the highest accuracy was demonstrated in cases of substitution of the DAT Case marker on ABS object DPs in ditransitives; as both the direct and indirect object had DAT Case markers, evidence for the location of the error came from the DAT clitic on AUX. NS were slightly less accurate in rejecting overgeneralization of the ERG Case marker on ABS arguments (both subjects and direct objects), and least accurate in rejecting DAT Case marking of ERG subjects of ditransitives. For the NS, there were no discounted tokens (e.g.,

¹⁷ The reason that non-Case/AUX-related rejections were not discounted or considered correct is because it is impossible to be certain that participants would not have rejected these sentences on some other grounds if their e.g., spelling or word order preferences were met.

rating of 3 with no correction, rejection with ungrammatical correction) for DP Case marking errors of substitution.

Turning to the ESB group, as with NS, errors of DAT substitution on ABS direct objects were most accurately rejected. This group diverged from the NS by showing least accuracy in rejection of ERG marking on ABS subjects and direct objects; the ESB group were slightly less accurate than the NS group on all substitution types.

Looking at L2 learners, in contrast to the NS and ESB group, the L2A participant correctly rejected all instances of ERG substitution on ABS subjects and direct objects. She was less accurate than the NS and ESB groups on both DAT substitution types, demonstrating 75 percent accuracy on these measures. Finally, the L2I pair was most accurate on rejecting ERG Case marker substitutions, and was least accurate on rejection of DAT Case marker substitution on ERG subjects.

The accuracy in rejection of DP Case marking errors of omission is shown in Table 15. It should be noted that errors of omission are in fact ambiguous between omission of an ERG or DAT DP Case marker and substitution of the null ABS Case marker in some cases.

Table 15. DP Case marking: % accuracy with errors of omission

		*ERG Case marker omission (n = 4)	*DAT Case marker omission (n = 4)	Overall accuracy
NS	<i>Rejected</i>	95.31%	96.88%	96.09%
	<i>Accepted</i>	4.69%	3.13%	3.91%
	<i>Discounted</i>	0%	0%	0%
ESB	<i>Rejected</i>	71.88%	75%	73.44%
	<i>Accepted</i>	28.13%	25%	26.56%
	<i>Discounted</i>	0%	0%	0%
L2A	<i>Rejected</i>	75%	100%	75%
	<i>Accepted</i>	25%	0%	25%
	<i>Discounted</i>	0%	0%	0%
L2I	<i>Rejected</i>	62.5%	50%	58.33%
	<i>Accepted</i>	37.5%	25%	25%
	<i>Discounted</i>	0%	25%	16.67%

For DP Case errors of omission, the correlation between proficiency and accuracy is not maintained; this is likely a result of the L2A participant's ceiling-level rejection of DAT Case marker omission. As this is a single participant, this cannot be considered generalizable but rather demonstrates the potential of an individual learner. The L2A participant also outperformed the ESB group in rejection of ERG Case marker omission.

The different levels of accuracy between the NS and ESB group in this category are noticeable. Although both groups were slightly more accurate in rejecting DAT Case marker omission, the ESB group (with half the number of participants of the NS group) was far less accurate overall. The ESB group was more accurate than the L2I pair, who reversed the pattern of the NS and ESB groups and showed more accuracy in rejecting ERG Case marker omission than DAT Case marker omission. It should be noted that two of the responses of the L2I group were discounted in DAT Case marker omission for a score of 3 with no offered correction.

The other locus for ungrammaticality was in AUX morphology. These were all errors of substitution, as errors of clitic omission for ABS and DAT would yield unattested AUX forms. The results for AUX substitution are shown in Table 16.

Table 16. AUX morphology: % accuracy with errors of substitution

		*3s agreement on anchor (n = 8)	*3s ERG clitic (n = 4)	*3s DAT clitic (n = 4)	Overall accuracy (n = 16)
NS	<i>Rejected</i>	99.22%	98.75%	97.92%	98.83%
	<i>Accepted</i>	0.78%	1.25%	2.08%	1.17%
	<i>Discounted</i>	0%	0%	0%	0%
ESB	<i>Rejected</i>	98.44%	97.5%	87.5%	96.09%
	<i>Accepted</i>	1.56%	0%	8.33%	2.34%
	<i>Discounted</i>	0%	2.5%	4.17%	1.56%
L2A	<i>Rejected</i>	100%	80%	100%	93.75%
	<i>Accepted</i>	0%	20%	0%	6.25%
	<i>Discounted</i>	0%	0%	0%	0
L2I	<i>Rejected</i>	93.75%	80%	83.33%	87.5%
	<i>Accepted</i>	6.25%	20%	16.67%	12.5%
	<i>Discounted</i>	0%	0%	0%	0%

The substitutions here all involve providing default (3rd Person singular) values when a more specific morpheme was required, per the predictions of the MUH. Note that substitution of the 3rd Person ERG clitic could also be interpreted as omission of this clitic, as it is null. Based on the overall accuracy scores, accuracy seems to increase with proficiency, but the caveat about uneven participant groups does apply. NS were more accurate in rejecting AUX agreement violations than any other error, except DAT Case substitution on ABS direct objects. Accuracy with default clitic substitution was slightly lower than with anchor agreement for the NS group. The ESB group, in comparison, was highly accurate in rejecting anchor and ERG clitic substitutions, but accuracy declined noticeably with the rejection of default DAT clitics. There were two instances in which responses from the ESB group were discounted, for providing an ungrammatical correction for a rating of 3.

The L2A learner was highly accurate, showing errors only in the rejection of the null default ERG clitic. The L2I pair was the least accurate overall; they were noticeably better at

rejecting 3rd Person singular substitution on the anchor of AUX than on either ERG or DAT clitics.

Finally, turning to the set of grammatical sentences, participants were expected to accept these sentences with a rating of 4 or 5, with no correction. As mentioned above, many of the rejections/corrections were in response not to Case- or AUX-related factors, but rather to issues like word order and spelling. However, it cannot be definitively claimed that the sentences would have been accepted if not for these factors, and therefore sentences marked unacceptable were indeed counted as unacceptable, regardless of whether the correction addressed the factors under investigation here. The results for accurate acceptance of grammatical sentences are shown in Table 17.

Table 17. Grammatical sentences: % accuracy in acceptance

		Intransitive (n = 8)	Transitive (n = 17)	Ditransitive (n = 15)	Overall accuracy (n = 40)
NS	<i>Rejected</i>	5.47%	5.51%	5.42%	5.47%
	<i>Accepted</i>	94.53%	94.49%	91.67%	93.44%
	<i>Discounted</i>	0%	0%	2.92%	1.09%
ESB	<i>Rejected</i>	3.13%	7.35%	9.17%	7.19%
	<i>Accepted</i>	96.88%	92.65%	90.83%	92.81%
	<i>Discounted</i>	0%	0%	0%	0%
L2A	<i>Rejected</i>	12.5%	5.88%	0%	5%
	<i>Accepted</i>	87.5%	94.12%	100%	95%
	<i>Discounted</i>	0%	0%	0%	0%
L2I	<i>Rejected</i>	12.5%	2.94%	0%	3.75%
	<i>Accepted</i>	87.5%	94.12%	90%	91.25%
	<i>Discounted</i>	0%	2.94%	10%	5%

The results in Table 17 show high levels of acceptance of grammatical sentences, both across proficiency levels and between sentence types. In terms of overall accuracy, the L2A individual showed the most accurate performance, correctly accepting 95 percent of the grammatical sentences; this was followed by the NS, ESB, and L2I groups. Note that the acceptance rate for these three groups was very close. Looking at the NS performance by

sentence types, the acceptance rate for intransitives and transitives was virtually the same, while acceptance of grammatical ditransitives trailed slightly. The rate of rejection of ditransitives is comparable to the other sentence types; the lower acceptance score is attributed to the fact that seven participant responses were discounted due to a rating of 3 with no correction provided.

More variation in acceptance rates between sentence types was observed within the EBS group. Here, transitives and ditransitive acceptability scores are comparable (ditransitives are slightly lower), while intransitives were accurately accepted more frequently. The L2A individual is least accurate in accepting intransitives, and accurately accepted all ditransitive sentences. Finally, the L2I pair was most accurate with accepting transitive sentences, at a rate comparable to the NS group. Acceptance rates for the L2I pair were lower for ditransitives, and lowest with intransitives.

Across proficiency groups, the effect of sentence type seems to be random. Although transitive sentences were accepted at comparable rates across proficiency groups, the sentence type with which learners were most accurate varies: intransitive for NS and ESB, ditransitive for the L2A individual, and transitives for the L2I pair.

The nature of rejections needs to be addressed. Recall from above that the dataset was pruned following an item analysis: items where 75 percent or fewer NS agreed with the intended judgments were deemed faulty and eliminated. For the grammatical sentences, the corrections that participants provided offer insight into the reason for rejection. Sentences rejected without reason or that came with an ungrammatical correction were discounted.

These errors can be broadly characterized as follows. In intransitives, 12 sentences were rejected overall; rejections were attributed to word order (with a preference shown for AUX in sentence-final position), spelling, and modifier morphology. There was only one instance in

which AUX was considered a source of error; this correction came from an ESB participant. Among the transitives, of the 27 rejected sentences, spelling, modifier morphology, and word order (with AUX in sentence-final position) remained considerations; additionally, participants corrected lexical selection and verbal morphology and suggested pro-drop. Pertaining to case, there were five instances in which Case on the ABS direct object was changed to DAT, but the given AUX form was maintained; there was one instance of detransitivization, in which the direct object was demoted to a PP and the AUX form was changed accordingly. Finally, one ESB participant suggested an incorrect AUX, reversing ERG and ABS clitics (**nauzu* for *zaitut*). Among rejected ditransitives, corrections focused on word choice, spelling, and word order; one correction changed the Number value of the ABS argument and changed the AUX accordingly. In sum, unlike acceptance of an ungrammatical sentence, which suggests insensitivity to a Case marking or AUX agreement violation, rejection of acceptable sentences does not necessarily speak to participants' knowledge about Case marking and AUX morphology. Corrections pertaining to these factors were very few.

Section 3.3 reviewed the analysis procedure and results of the GJT task. Overall, this task suggests that in most cases there is increasing accuracy in rejecting ungrammatical sentence/accepting grammatical sentences as proficiency increases, although this cannot be claimed definitively due to small and imbalanced participant groups. Ungrammatical sentences were divided into two groups: the first consisted of Case marking errors. In errors of suppliance, participants were not consistent in their rejection of DAT Case marker substitution (with the exception of the L2A individual); however, both NS and ESB groups most accurately rejected errors with DAT Case marking in at least one context. Considering errors of omission, all groups but the L2I pair more accurately rejected lack of DAT Case markers than omission of an ERG

Case marker. Looking at errors on AUX, the NS group was fairly even in their rejection of ERG clitic errors, DAT clitic errors, and anchor morphology errors. In contrast, the ESB group was least accurate with DAT clitic errors, while the L2A individual was least accurate with ERG clitic errors. The L2I pair was less accurate with clitics than with anchor morphology overall. Finally, considering the acceptance of grammatical sentences, recall that rejection is attributable to multiple factors and not necessarily indicative of Case or AUX knowledge. Here, accuracy was roughly comparable across groups, with a variable effect of valency (that is, no distinct ‘most difficult’ argument structure) emerged from the three types. The following section interprets these results and those reported in Sections 3.1 and 3.2 above.

4 Discussion

This section discusses the results of the three experimental tasks described above in terms of the predictions made by the IH and the MUH. It provides initial answers to the research questions in (1) and addresses limitations of the present study. Each task is addressed individually (Sections 4.1-4.3), and the findings are discussed as a whole (Section 4.4); limitations and directions for future research are suggested (Section 4.5).

The purpose of this pilot experiment was to test the predictions of two competing hypotheses for the source of the challenge that inflectional morphology poses to L2 learners: the first, the Interpretability Hypothesis (Tsimplici & Dimitrakopoulou, 2007; Tsimplici & Mastropavlou, 2007), claims that these issues have syntactic origins. Specifically, learners are not predicted to be able to acquire new, uninterpretable features in the L2. For Basque, this predicts issues with the new ERG and ABS Case features, but not with the DAT Case feature that can be transferred from the L1 (Spanish). Difficulty should be observed in all instances of these uninterpretable features, meaning that Case markers and doubled clitics on AUX should be

equally affected. In contrast, Phi features involved in agreement (Person and Number on the anchor of AUX, Number on DP Case markers), should be unaffected. The alternative hypothesis, the Morphological Underspecification Hypothesis (McCarthy, 2008; McCarthy, 2007), claims that underlying syntactic representations can reach nativelike levels, but learners experience difficulty in the production of inflectional morphology itself. Learners will establish ‘default’ forms with 3rd Person singular features that will be inserted where a more specific feature value is needed. For Basque, this predicts errors on doubled clitic, the anchor of AUX, and DP Case markers – errors are expected to involve the substitution of 3rd Person singular clitics and agreement, and the substitution of ABS Case markers.

As discussed Sections 2 and 3 above, the number of participants in this pilot constitutes a serious limitation in the ability to make claims about behavior within and between groups of different proficiency levels. Particularly problematic are the numbers of L2 learners: three overall, one with advanced proficiency, and two with intermediate proficiency. Therefore, any claims about L2 learner behavior in relation to the hypotheses above are purely descriptive – they demonstrate a single possible outcome in a task where an infinite number of outcomes are possible. However, the behavior of these learners can offer insight into what might be possible with a larger group on similar tasks. Therefore, results from these participants are useful in determining lines of inquiry for future research, both in terms of potential performance and in terms of task suitability. With little generativist SLA research done on Basque, learners’ abilities with basic empirical tasks are unexplored; even the current results are useful in the development of larger-scale future experiments.

Also pertaining to participants, responses to the LBQ and results on the proficiency test discussed above motivated the separation of those who consider themselves native Basque

speakers into two distinct groups: NS, who learned Basque from birth in the home with Basque-speaking families, and ESB, who learned Basque from early childhood in school and come from Spanish-speaking families. The former report using Basque every day in most possible interactions, while the latter report less frequent use of Basque in their daily adult lives. There is empirical motivation to keep these groups separate. First, research on acquisition of Basque as an L1 or L2 in childhood notes different patterns of acquisition of DP Case markers and AUX forms (Austin, 2007, 2012; Ezeizabarrena & Larrañaga, 1996; Ezeizabarrena, 2012; Meisel & Ezeizabarrena, 1996), but suggests that children's performance is comparable by age 8 (Ezeizabarrena, 2012). While assessment of linguistic behavior is largely comparable between these two populations as adults (e.g., Erdocia, Zawiszewski, & Laka, 2014; Zawiszewski et al., 2011), ESB individuals show less sensitivity to ERG Case marking violations (Zawiszewski et al., 2011). Given the relatively few studies that compare Basque NS and ESB individuals, maintaining this distinction in the present study helps to further understanding of any persistent behavioral differences of these populations as adults. Further, the focus of the adult ESB studies cited above is on linguistic processing; therefore, descriptions of participants' performance on linguistic behavioral measures are not given in great detail. Even with very high levels of accuracy, generativist studies like the present one help to clarify the picture of participants' abilities at the highest proficiency levels, which can serve as a basis for future comparison with learners of lower proficiency. With these themes in mind, the remainder of this section addresses results of the suppliance task, writing task, and GJT.

4.1 Task 1: Suppliance

The overall trends in the quantity and nature of errors produced in the suppliance task are as follows. The NS and ESB groups showed lower accuracy overall than the L2 participants,

which could be attributable to the disproportionate populations in these groups. Specifically, the performance of the NS group may be attributable to a single individual (Appendix B). For both the NS and ESB groups, errors occurred with both DP Case markers and AUX agreement. Median accuracy scores suggest that these two groups may be ultimately comparable, but they demonstrated differences in accuracy in the production of DP Case markers versus AUX forms. While errors were distributed somewhat evenly between Case markers and AUX for the NS group, the ESB group showed greater accuracy overall with DP Case markers than with AUX forms.

For both groups, errors in AUX production most frequently involved Number mismatch between an ERG clitic and an ERG subject. Interestingly, these are not errors of Agree, but rather of an error in the copying of the interpretable Phi features of the original DP argument and the copy reduced to a clitic under M-merger. Therefore, all the features involved are interpretable. While the IH predicts difficulty with clitics in that they are case-marked, the fact that the source of error was an interpretable Phi feature indicates that these errors do not offer evidence for that hypothesis. The MUH predicts that the nature of such errors in Number agreement would involve the substitution of a singular form for a plural one; this prediction is also not realized, as more frequently a plural clitic was used in a singular context. Looking at errors in agreement in the anchor of AUX, however, a different picture emerges. Though both the NS and ESB groups made fewer errors in anchor agreement, those errors were more frequently due to the presence of a singular Number feature in a plural context, as predicted by the MUH.

Turning to DP Case marking, the ESB group was more accurate overall than the NS group; this is not unexpected by the IH, which predicts that access to uninterpretable features is

available to learners who begin acquiring the language before the onset of puberty, which these participants did. The ESB group demonstrated three errors in DP Case marking: the substitution of ABS in an ERG context, the substitution of a plural form in a singular context, and one unrelated to Case or Number features. The first error meets the predictions of both the MUH and the IH; the former is realized in that the default ABS Case feature is being overgeneralized. However, this could alternatively be viewed as an error of omission and therefore cannot be definitively taken as evidence for the MUH. This error could also be considered evidence for the IH in that an uninterpretable feature is the source of difficulty. In contrast, the error in Number on the Case marker cannot be taken as evidence for either hypothesis, in that it is not related to the Case feature (IH), and that a plural feature was used in a singular contexts.

The NS group produced more errors in DP Case marking, on both subject and object DPs. While ABS substitution/ERG omission errors arose in this group as well, there were also two instances of the suppliance of the DAT case marker in lieu of the ABS Case marker; this is contrary to predictions of the MUH, in that it is not the default form being substituted. Evidence for the MUH comes from Number agreement errors in DP Case marking, however; for the NS, most substitutions were of singular forms in plural contexts.

However, NS results cannot speak directly to the predictions of the IH; this theory discusses the construction of a new grammar by L2 learners. For example, for NS, there is no acquisition of new uninterpretable features involved; the Case features here are those selected during L1 acquisition when access to UG is unfettered. Therefore, NS cannot be said to be demonstrating anything about the IH per se; rather consideration of the results in terms of this theory provides a baseline for the comparison of L2 learner behavior. Real language data is

subject to human error, and noting any trends in errors of NS serves to give perspective to errors produced by L2 learners.

Regarding the MUH, in principle this theory could be extended to non-target-like representations developed by NS for their L1 (per Harley & Ritter, 2002), as well as the representations developed by L2 learners. However, this would provide an explanation for an individual's behavior; if a significant number of NS participants developed a default, underspecified morpheme for a particular context, this would signal a larger shift in the grammar. Therefore, the discussion here will assume that the typical NS participant uses the appropriately specific VI, and the MUH predictions apply to ESB, L2A, and L2I groups.

On the other hand, the ESB group results will be considered in terms of these hypotheses and in comparison to NS patterns with the aim of determining if there are any aspects of production in which the two groups seem to consistently vary. In such cases, the influence of the L1 (Spanish) despite early AoA of the L2 may be considered, and the predictions of the MUH and IH can be assessed for early-onset, high-proficiency learners. This being said, the NS results on this task set an expectation for some variability in accuracy both with DP Case markers and with AUX; Case marker errors can be expected on both subjects and objects and can be the result of both Case features or Number features, while AUX errors can be expected on both ERG clitics and the anchor of AUX, related to the Number feature. Based on this picture, the performance of the ESB group is highly comparable to the NS group: in no case did the ESB group make errors that at least one NS did *not* make, and overall the distribution of the errors was similar (e.g., more substitution of plural for singular features on ERG clitics, etc.). Similarly, the single error produced by the L2I pair, the substitution of a singular Case object marker in a

plural context, can also be considered in the realm of normal linguistic variation; NS made a similar error in eight instances.

Therefore, the results of the suppliance task do not offer any explicit support for the IH nor for the MUH. When errors occurred in L2 and ESB populations, they were well within the expectations set by NS performance. Comparison of ESB and NS performance supports findings that differences in child learners balance out at after a certain age (Ezeizabarrena, 2012), and that ESB learners behave virtually indistinguishably from NS as adults. These results also suggest that individual adult L2 learners have the potential to perform like NS, indicating the development of a targetlike underlying syntactic representation with new uninterpretable features and the ability to form and produce correct feature bundles. This is in direct opposition of the claims of the IH, which claims post-pubescent acquisition of new uninterpretable features to be impossible. However, given that all of the sentences in this task were monotransitive with consistent (ERG) subject and (ABS) direct object marking, it is possible that these results could be attributed to the direct transfer of NOM and ACC features from the L1, Spanish. On such an analysis, the IH would not be falsified, in Hawkins & Hattori's view. Finally, the variability in performance shown within the NS group on this task suggests that it would be useful in eliciting a more complete picture of learners' knowledge; as not all NS performed at ceiling on this measure, it could be expected to elicit variability in learners' performance as well. With a larger sample size of learners, it is possible that trends would emerge beyond the expectation set by NS behavior that would offer evidence for the source of difficulty with inflectional morphology, if any.

4.2 Task 2: Writing

The writing task elicited naturalistic data from participants; results show overall high accuracy for both the NS and ESB groups. Both were entirely accurate in production of AUX, direct objects, and indirect objects. For both groups, errors were limited to Case marking on subjects: for the NS group, the single error was observed on the ABS subject of an intransitive. In comparison, the ESB group produced several errors with both the ABS subject of an intransitive (production of an ERG Case marker) and with the ERG subject of a transitive (omission of an ERG Case marker/substitution of an ABS Case marker). Since errors with ERG Case markers were not observed in the NS group, this might be taken as evidence for a challenge with ERG DP Case marking by ESB participants. This is in contrast to the expectation of the IH that NS and ESB behave indistinguishable. In terms of the actual errors made, however, this realizes the predictions of both the IH in that an uninterpretable feature that does not appear in Spanish is at issue; it also realizes the prediction of the MUH that a default ABS clitic may be substituted for an ERG one.

Turning to learner behavior, learners of both levels were less accurate overall than the NS or ESB groups. The L2A individual was entirely accurate in her production of Case marking on all DPs, unlike both the NS and ESB groups as a whole. Her accuracy in the production of AUX, however, included errors that were not observed in the NS and ESB groups. These errors were limited to intransitive AUX forms, and constituted a single error in the seven tokens produced. The error was one of Phi feature substitution, with the 1st Person plural form *gara* appearing where the 1st Person singular form *naiz* was expected. This runs counter to the predictions of both the IH and the MUH. The IH predicts errors should pertain to Case marking; this error

showed an error in Phi feature production. The nature of this error is contra the MUH as well, as it was a plural produced in a singular context.

Like all the other groups, the L2I learners showed complete accuracy in production of Case marking on direct and indirect objects. Like the L2A learner, they produced errors in AUX, though these errors appeared with transitives and ditransitives. With transitive AUX, three errors were the omission of 1st Person singular ERG clitics, and in two cases, use of a plural feature in a singular context (once on the ERG clitic, once on the anchor of AUX). With the ditransitive, the only error was one of omission of the DAT clitic. Like the NS and ESB groups, the L2I learners produced errors in subject marking; only one error of this type was made involving the omission of an ERG Case marker.

The L2I pair's performance was comparable to the NS group in accuracy of Case marking. However, errors were produced in AUX that were not demonstrated by NS; these included ERG clitic omission, DAT clitic omission, and plural features appearing in singular contexts. ERG clitic omission could be taken as support of the MUH, if viewed as the substitution of the null 3rd Person singular ERG clitic in lieu of the 1st Person singular one; however, there is no evidence to differentiate omission from substitution. The Number feature substitution runs counter to the MUH's predictions for default Number. Omission of the ERG clitic could be taken as evidence for the IH; this theory is further supported by the fact that an error was produced with the ERG Case marker as well. However, DAT clitic omission and Phi feature substitution are not predicted as the former can be transferred from the L1 (Spanish) and the latter pertain to interpretable features.

Overall, although ESB, L2A, and L2I participants did all differ from the standard set by the NS in some regard, no definitive evidence was produced in favor of either the IH or the

MUH. The evidence from the ESB group could be attributed to either theory, but the limitation of errors to the DP Case marking domain is not predicted by either theory. The L2A learners' only substitution pertained to Phi features (not predicted by the IH), but ran counter to the 'default' specification put forth by the MUH. Finally, taken together, the errors in ERG Case marking and ERG clitic production seen in the L2I pair offers tentative support for the IH, but this is tempered by unpredicted errors with DAT clitics and Phi feature agreement. Errors with Phi features again run counter to the MUH.

However, the writing task showed to be valuable in offering an avenue for the collection of naturalistic linguistic data. The coding schema used here proved useful in identifying the constructions necessary for comparison of the IH and MUH and could be reused in the future without modification. The prompts themselves proved able to elicit a large number of present tense indicative AUX verbs. The variation in production and divergence from NS patterns suggests that with more samples from participants of all proficiency levels, possible trends in learner behavior could emerge.

4.3 Task 3: Grammaticality Judgment

Unlike the suppliance and writing task, which elicited production, the GJT asked learners to assess given sentences and determine the source of error, if any. Half the sentences were ungrammatical, containing either an error in DP Case marking or in AUX morphology; the purpose was to determine if learners were sensitive to errors of these types. The remaining sentences were grammatical; the purpose was to ensure that learners could recognize correct agreement in Case marking and AUX.

First considering the ungrammatical sentences, the NS set a high bar for comparison with near-ceiling overall accuracy in rejection of these sentences (96 percent accuracy in rejecting

Case marking errors, 99 percent accuracy in rejecting AUX morphology errors). While ESB participants' performance with AUX errors was overall comparable (96 percent accurate), there was a noticeable difference in their ability to reject DP Case marking errors. ESB participants performed with less accuracy than NS on all Case error of both substitution and omission. Individual analysis (Appendix B) shows that this trend is partially attributable to the performance of one participant. In substitutions, EBS were more accurate in rejecting DAT Case marker substitutions than ERG Case substitutions. These substitution errors were designed to address the predictions of the IH: ESB participants were more accurate with DAT Case substitutions than ERG Case substitutions, as expected due to the DAT Case of Spanish. Omission of both ERG and DAT Case markers were erroneously accepted, though were more sensitive to DAT Case marker omissions than ERG Case marker omissions. These errors could be explained on either theory: for the MUH, these could be considered substitution of an ABS Case marker, while the IH would take note of the fact that there were more errors with ERG Case marking than with the DAT. However, on the IH, ESB learners should not diverge in performance from NS; if the distinction between these two groups were further maintained with larger samples, this might suggest that the critical period for uninterpretable features is extremely young (before 2 years old). Turning to AUX errors, ESB performance was comparable with NS performance with the exception of the substitution of 3rd Person singular DAT clitics, which were incorrectly accepted at a higher rate than default agreement on the anchor of ERG clitic. In terms of the MUH, this could be considered suggestive of the establishment of a default DAT clitic; why defaults are not established elsewhere remains unexplained.

Turning to L2 learners' performance with ungrammatical sentences, both groups were noticeably less accurate than NS in rejection of both error types, as expected. The L2A

individual was entirely accurate in rejection of ERG Case marker substitution on DPs and DAT Case marker omission, but showed difficulty with DAT Case marker substitution and ERG Case omission. Her difficulties with AUX morphology were limited to substitution of default 3rd Person singular features on ERG clitics. Recall that this form is null, and could also be interpreted as omission of the ERG clitic altogether. Results with DP Case markers paints a contrasting picture for the IH: the L2A learner is more accurate with DAT Case marker omission than ERG Case marker omission, as predicted, but is more accurate with ERG Case marker substitution than DAT Case marker substitution, contra the IH. The MUH predicts that ERG and DAT Case markers will be omitted equally, but this is not observed either. Similarly, the MUH predicts equal difficulty with clitics and anchor agreement on AUX, but this individual only shows errors in rejecting a default ERG clitic.

Finally, L2I learners showed errors in rejecting ungrammaticalities of every type: overall, more difficulty was seen in the rejection of DP Case marking errors than AUX morphology errors, but accuracy was noticeably lower than the NS standard on every measure. These findings offer support for both the IH and the MUH.

Turning to grammatical sentences, overall accuracy across all proficiency groups was comparable. This suggests that learners are able to identify acceptable sentences earlier than they are able to spot errors. Among the grammatical examples, the effect of valency seems limited; there is no one AUX type that learners found easier or more troublesome.

Taken together, the results of the GJT suggest a preliminary correlation between proficiency and accuracy in rejection of ungrammatical sentences; accurate acceptance of grammatical sentences seems to be possible before rejection of ungrammatical ones, as expected. Larger participant groups are needed to prove this correlation. In terms of the predictions of the

IH and MUH, the L2I learners offered evidence for both theories, showing difficulties in rejecting errors of all natures (omission, substitution) for both DP Case markers and AUX morphology. The L2A learner offered conflicting evidence for the IH, showing variable sensitivity to errors with ERG and DAT Case markers; in the AUX domain, her ceiling accuracy on anchor agreement and DAT clitics offers counterevidence to the MUH. The majority of the errors produced by the ESB group could be taken as support for either theory, although the establishment of a default 3rd Person singular DAT clitic per the MUH is possible.

In terms of the future utility of the GJT, the fact that most groups did not achieve ceiling accuracy scores suggests that the sentences were at an appropriate level for participants of varying proficiency. This is further evidenced by increasing accuracy with proficiency (in most cases). The use of a Leikert rating system was useful in that it allowed learners' knowledge to be more accurately assessed, and also aided in understanding rejection of grammatical sentences. Future use of this instrument would require balancing out error types, and would revise grammatical sentences based on participants' feedback on word order preferences and spelling. However, the results reported here suggest that it was challenging enough to elicit data that could show more about participants' underlying knowledge.

4.4 Overall findings

The discussion of results of this study suggests that while ESB, L2A, and L2I participants all display behavior with the interpretation and production of inflectional morphology that was not demonstrated by the NS group, no definitive support can be offered for either the IH or the MUH in identifying the underlying of the challenge of inflectional morphology. Interestingly, ESB speakers' performance varied noticeably from NS in many regards, which is in direct contradiction to the claims of the IH with respect to AoA. If these findings were replicated with a

larger sample set, this would indicate that there is more at play in the acquisition of uninterpretable features than simply age – for example, quality of input and use of Basque both in childhood and adulthood should be considered.

In lieu of a clear explanation of learner behavior by the IH or the MUH, future work may turn to analysis in terms of other theories pertaining to the acquisition and production of L2 inflectional morphology. As discussed in Chapter 6, one such theory, the Feature Reassembly Hypothesis (FRH) (Lardiere, 2008, 2009), offers a characterization of the L2 acquisition task that provides a flexibility in analyzing learner behavior that is not presented by the IH/MUH. Recall that the FRH, taking Full Access/Full Transfer (Schwartz & Sprouse, 1996) as a starting point, describes the acquisition process of one involving the reorganization of feature bundles from their configuration in the L1 to that in the L2, and the subsequent association of the new feature bundle with a phonological form as well as knowledge of the optional or obligatory contexts for its appearance.

Consider the task at hand for the ESB and learner groups in terms of the FRH.¹⁸ On this approach, these populations are reorganizing the feature bundles they have established for their L1, Spanish, in terms of their L2, Basque. Some of the many issues that learners need to address in this process are the inclusion of new Case features (ERG, ABS), and the obligatory nature of clitic doubling in contexts not observed in the L1 (e.g., with subjects, direct objects). Further, they need to establish that the feature bundles inserted in the anchor of AUX must reflect the ABS argument; while subject (NOM) agreement is observed on verbs in the L1, in Basque this

¹⁸ To my knowledge, the FRH has not been applied to the results of adult speakers who acquire their L2 before puberty, particularly not with early childhood learners like ESB speakers. The extension of the FRH to this population would require careful consideration about what the speakers' 'initial state' is before beginning to learn the L2, particular if the representation of the L1 is not yet fully developed.

agreement is either subject *or* object agreement. This variable source of agreement will influence the feature bundle selected for insertion in the anchor position.

Looking at the overall performance of these groups, recall that in the suppliance and writing tasks, the ESB group and the L2 participants differed in the areas where they were least accurate. In the suppliance task, the ESB group performed less accurately with AUX production, while the L2I group performed less accurately with DP Case marker production. In the writing task, the ESB group were least accurate in subject production, while both the L2A individual and L2I pair were least accurate in AUX production. The IH and MUH both predict consistency in the type of construction that learners will find most challenging, and therefore struggle to explain why these groups would perform differently from each other on the same task – as well as why the group would perform differently from task to task. The FRH, on the other hand, does not make strong predictions for the particular structures that will be most challenging and is therefore not invalidated by conflicting results across tasks like those mentioned here. Therefore, although the evidence for and against the IH and MUH requires further validation, further work may turn to alternative analyses of the L2 acquisition task, particularly the FRH, to characterize variability in learner performance.

Despite the lack of generalizable patterns for learner behavior, the results of this pilot study have several benefits. First, comparison of the behavior of the ESB group to the NS group suggests that these participants should continue to be analyzed separately. While their performance was largely comparable on the suppliance task, ESB participants produced more errors in written production, and were less accurate on the GJT. This suggests that while their proficiency may be very high, there are possible differences in the underlying grammatical representations and morphological inventories of these groups. Based on Ezeizabarrena's (2012)

work with ESB children and the results on linguistic behavior tasks in processing studies (e.g., Zawiszewski et al., 2011) with ESB adults, conflating NS and ESB groups might be considered. The results here suggest that combining these groups might hide noticeable and patterned differences in linguistic behavior. The preliminary difference in accuracy noted here requires further investigation with larger NS and ESB populations, but I suggest that this distinction be maintained in future studies until more evidence on similar measures has been collected.

Second, preliminary answers to the research questions in Chapter 6 can be made, with the caveat that these answers require further support from larger participant populations. These research questions are presented again below in (2).

(2) *Research questions*

- a. Can L2 learners of Basque ultimately acquire the many complex forms of the present perfect AUX?
 - i. How does increasing proficiency correlate with the use of AUX?
 - ii. What is the influence of age and context of acquisition?
- b. What aspects of the structure of AUX impact its acquisition?
 - i. Does a morpheme's status as a clitic (i.e., ERG, DAT or ABS doubled clitics) vs. agreement marker (i.e., v with ABS features Agree-Copied) play a role?
 - ii. What is the relationship between case morphology and the acquisition of AUX?

Addressing the (2a), the results of this study suggest that while learners may not always be able to accurately produce all forms of AUX, nativelike production is possible in some regards.

Consider the L2A individual, whose individual performance often seemed more accurate than the NS group, based on her ceiling-level accuracy on several measures. This participant suggests that in many instances, at least on experimental tasks, L2 learners can perform like NS. Turning to (2ai), the small number of L2 learners limits the ability to offer a firm answer. However, trends on the GJT suggest that increasing proficiency correlates with increasing accuracy with AUX use. In regard to (2aii), the performance of the ESB group was not equivalent to NS

performance on all measures; this suggests that lingering effects of early AoA from an instructional context are worth further investigation.

Turning to (2b), the results presented here offer a mixed picture about the influence of the structure of AUX. For (2bi), impressionistically, it seems that clitics are the source of more difficulty than the anchor of AUX. This is supported by the findings of the suppliance task (Table 8) and the GJT (Table 16), but further work is needed to support this claim. With regard to the relationship between AUX and the Case system as in (2bii), the results of the tasks here offer a mixed picture. In the suppliance task (Table 4), Case morphology seems to be prone to fewer errors than AUX production. In the writing task (Table 10), Case marker type seems to be a driving factor, with subject Case markers prone to more error than direct or indirect object Case markers. Finally, in the GJT (Table 13), learners of all proficiency levels are worse with Case marking errors than AUX errors. Thus, no clear trend about the relationship between Case markers and AUX production emerges from these data. Although all of the responses to the research questions in (2) here are impressionistic, they offer preliminary insight into the roles of proficiency and of underlying syntactic structure in acquisition of the Basque AUX and Case system.

Finally, this pilot experiment has developed a battery of experimental tests that can be used in future testing. Even with small participant pools, the scores suggest that the measure is not too easy or too hard for participants of varying proficiency levels. Further, elicitation tasks succeed in obtaining the desired data. The GJT stimuli could be further revised and developed based on the feedback from participants, particularly pertaining to the grammatical sentences, but the types of errors included cover a broad range of possibilities and test participants' knowledge in a variety of constructions.

4.5 Limitations and future research

The inability to make within- or across-group comparisons, or offer support for the IH or MUH, can be attributed to the small and unbalanced number of participants in each group, and constitutes the biggest limitation of this study. In order to overcome this, participant groups of at least 30 with a normal skew are required. With such populations, further statistical analyses can be performed to uncover underlying trends and relationships beyond what is available from the descriptive statistics reported here.

Regarding future research, the test battery is reliable enough to undergo further use. Including a larger number of participants at all proficiency levels will yield results that can offer more comparability in performance. For example, a single error in the writing task from the NS group here reduces accuracy to 99.86 percent, but for the L2A individual accuracy is reduced to 95.24 percent. In addition to more between-group comparability, larger participant groups would have offered more support or counterevidence for the IH and/or MUH. With populations of this size, no trend was exhibited strongly enough to overcome counterevidence, or to prove one hypothesis more successful in explaining the data than the other.

Therefore, future research will begin with a similar experiment design with a larger participant population, with an agenda to grow from there. As suggested in the writing task, possible avenues of investigation could explore participants' abilities with unergatives verbs, or could explore whether trends observed with present indicative AUX are maintained with changes in Tense and Mood. After obtaining a clear picture from the tasks here, additional experiments could be developed to probe areas where learners seem to struggle. The design of the GJT was purposefully broad and included a number of different potential sources for error for this reason;

based on results on this task, new and more specific research questions about particular Cases or morphemes can be explored.

5 Conclusion

This chapter has presented the design, results, and discussion of a pilot experiment intended to investigate the nature of difficulties with inflectional morphology related to the Basque AUX and Case system. Results were intended to offer support for one of two theories regarding this challenge: the IH, which focuses on the role of syntactic features, and the MUH, which focuses on the assembly and production of morphological feature bundles (VIs).

The experiment consisted of five tasks: a language background questionnaire, a proficiency task, a suppliance task, a writing task, and a GJT. The number of participants who completed all 5 tasks was 27; these participants were separated into groups based on proficiency. Four groups were formed: NS, who learned Basque from birth; ESB, who learned Basque from early childhood; and two learner groups who acquired Basque beginning in adulthood: L2 advanced, and L2 intermediate. Ultimately, the number of participants recruited for these groups was highly uneven, with the NS group ranging in size from 16-21, the ESB having 8, the L2A comprised of a single participant, and the L2I having 2.

Due to the small and imbalanced proficiency groups, none of the results for any of the tasks was generalizable overall, although initial trends were able to be discerned and await further investigation. Further, the small population size did not yield definitive support for one hypothesis over another. However, results were able to provide preliminary answers to research questions about the role of proficiency and age of acquisition, and the influence of grammatical structure on the acquisition process. Findings did suggest that future studies on Basque maintain a distinction between speakers who learned Basque from birth at home, and those who acquired

it in early childhood at school, as the performance of these groups was not comparable across all measures. Another benefit of this experiment is the development of a battery of tests designed to elicit knowledge of Case marking and AUX forms in a variety of ways; initial results suggest these tasks could be reused with minimal revisions, and that scoring and analysis procedures were able to distill the required information. The experiment here sets the stage for future research the acquisition of the Basque AUX and Case system from a generativist perspective, with suggestions for multiple directions avenues of inquiry.

CHAPTER 8: Conclusion

This dissertation has investigated the auxiliary (AUX) verb and Case system of Basque from two perspectives: theoretical linguistic analysis, and generativist second language acquisition (SLA). The overall aim was to provide a complete description of AUX derivation and Case assignment in simple clauses, which provides a foundation for acquisition-oriented study. Within SLA, and particularly within the generativist camp, a theoretically adequate description of the object under investigation is crucial in the development of hypotheses and experimental materials pertaining to the acquisition process.

With this in mind, Chapter 1 began with a brief description of word order, AUX paradigms, and Case marking in Basque, as well as a discussion of the unique characterization of ‘native speakers’ of the language, given the diverse linguistic experiences that these individuals have. This chapter also briefly introduced relevant aspects of the theoretical frameworks adopted in this project: for syntax, Minimalism (Chomsky, 1995, 2000, 2001), and for morphology, Distributed Morphology (Halle & Marantz, 1993, 1994).

Formal analysis began in Chapter 2, which introduced basic clause structure for unaccusative intransitive, transitive, and ditransitive sentences. This chapter also delved further into the structure of the AUX verb, showing its composition and briefly discussing relationships of the morphemes to arguments in the syntax. Assumptions about the feature inventory of the language were also presented. Together these discussions provided the basis for a more detailed look at underlying syntactic structure and relationships.

Chapter 3 explored current understandings of how Case assignment and agreement relations arise in Basque. Many of the patterns and puzzles of Basque are well-known and subject to much debate within the theoretical literature. With so many competing viewpoints, the

goal of this chapter was not to offer a completely novel analysis of the facts, but rather offer a synthesis of several approaches. This effort is necessary because, while much discussion exists about individual issues both in Basque and cross-linguistically, (e.g., ergative (ERG) Case, Person Case Constraint (PCC) effects), a successful analysis of the language must show that these individual solutions are compatible with one another.

Thus, Chapter 3 studied two main issues: the assignment of Case, and the appearance of absolutive (ABS) agreement morphology on the anchor of AUX. Exploration of these issues necessarily lead to a discussion of intransitive unergatives and PCC effects in ditransitives and (some) applicative intransitives as well. Regarding Case, the analysis adopted ultimately advocated for structural Case assignment of ABS (via Agree with *v*) and ERG (via Agree with T). However, in order to account for the ERG-ABS Case system and truly intransitive unergative clauses (Preminger, 2012), the ability of *v* and T to assign Case is claimed to be parameterized (Anand & Nevins, 2006; Rezac, et al., 2014). Further, in order to account for the distribution of ERG Case marking of DPs and ERG doubled clitics, Agree with T is a two-part operation, with Agree responsible for the valuation of uninterpretable features on T and a subsequent Move operation resulting in the appearance of ERG DP marking (Rezac et al., 2014). In contrast to ERG and ABS Case, dative (DAT) Case is claimed to be inherent (Rezac, 2008a).

Turning to agreement, the anchor of AUX shows inflection related to the features of the ABS argument, but the presence of ABS, ERG, and DAT doubled clitics (and for the first two, Case assignment), indicates that there are multiple Agree relations underlying this structure. Therefore, the analysis of Arregi & Nevins (2012) was adopted with regard to the division of labor for the Agree operation. In the syntax, Probes and Goals undergo Agree-Link, which facilitates Case assignment and clitic doubling, while post-syntactically, some Agree-Link

relations are eligible for Agree-Copy, which results in the appearance of inflectional morphology. I built on this proposal by suggesting that Agree-Copy is governed by accessibility to agreement à la Bobaljik (2008). Basque ‘cuts off’ accessibility to Agree-Copy, limiting it to ABS arguments only. Finally, patterns of ABS inflection on the anchor of AUX resulted in the claim that v Probes separately for Person and Number, with the Person Probe relativized to seek arguments that include participant features. This claim accounts for the distribution of ABS doubled clitics and the appearance of Number-only agreement with 3rd Person ABS arguments.

Based on the synthesized analysis of Case assignment and Agree relations, Chapter 4 focused on the theoretical investigation at hand: the process of clitic doubling in Basque. Clitic doubling is a widely investigated issue, with numerous existing analyses based on data from a range of languages. First, this chapter examined the arguments for the analysis of ERG, DAT, and ABS morphemes on AUX (Arregi & Nevins, 2012; Preminger, 2009), ultimately adopting the view of Arregi & Nevins (2012): ERG, DAT, and ABS morphemes on AUX are all doubled clitics, but there is a gap in the ABS inventory and 3rd Person ABS arguments cannot be clitic-doubled. The main approaches to clitic doubling were presented in this chapter, and for each a brief extension to Basque was offered. A good deal of discussion was dedicated to the analysis offered by Arregi & Nevins (2012) for clitic doubling; this analysis has the benefit of offering a structural reason for the absence of 3rd Person clitics, but ultimately the functional architecture involved is not compatible with classic analyses of structural Case assignment, nor are all of the projections clearly motivated beyond their use in generating doubled clitics.

Therefore, Chapter 4 suggested the extension of the M-merger approach to clitic doubling (Harizanov, 2014; Kramer, 2014). On this analysis, clitic doubling is initiated by Agree and facilitated by subsequent Copy-Movement to the specifier (Spec) of the Probing head. The

Moved copy reduces to form a complex head with the Probe, with the reduced version surfacing as a doubled clitic. The discussion in this chapter demonstrated that this approach is extendable to Basque, but suggested a few modifications and restrictions. First, in order to account for the lack of 3rd Person clitics, it was suggested that in Basque, *v* Probes separately for Person and Number, as mentioned in Chapter 3. On the dual assumptions that the Person Probe searches for an argument with a Participant feature, and that this Probe hosts the EPP feature of *v*, ABS doubled clitics do not arise because of failure to Agree-Link with the Person Probe. (Number Agree-Link proceeds, allowing Case assignment and yielding Number inflection on the anchor of AUX.) This leaves the question of why DAT 3rd Person doubled clitics arise; here, I suggest that 3rd Person DAT arguments include a negatively valued, interpretable [-participant] feature (Adger & Harbour, 2007), which corresponds to speakers' observed animacy preferences.

Second, ERG clitic doubling raised two issues based on the structural Case analysis adopted in Chapter 3. This analysis assigns Case via Movement of the KP + DP to Spec, TP, while M-merger to this point was predicated on the movement of a Copy of the DP. I suggested the entire Moved copy of the KP is what undergoes M-merger, leaving the KP + DP in Spec, *v*P to be spelled out as the ERG argument. This modification suggests that M-merger can operate on different types of syntactic objects, provided that the Merge is in a targeted position (e.g., Spec, TP). This is further supported by instances in which ERG Case marking diverges from the form of the doubled clitic, as in some INF + *behar* constructions; here, I suggested that M-merger can operate on expletives, which in Basque may reflect the Number feature of the argument for which they appear. Again, this proposal sees parallels with the M-merger of DAT clitics, which reduce to P from a Moved PP in Spec, *v*P, as the agglutinative nature of (overt) postpositions in Basque suggests that postposition stranding is impossible.

Finally, PCC effects in ditransitives and DAT-ABS applicative intransitives suggest that there is a limit to the number of specifier positions that can be created to host copies of Goals. In these structures, the copy of the higher argument (the DAT) occupies the specifier position, leaving any Copies of 1st/2nd Person ABS arguments that might be generated without a landing site, causing the derivation to crash. When the ABS argument is 3rd Person, no Copy is generated and the derivation succeeds, in line with the strong PCC. This analysis does not account for the rarer AUX type of ABS-DAT applicative intransitives that *do* allow both ABS and DAT doubled clitics; this is a topic for further investigation. It is worth noting that younger speakers find such AUX forms to be very literary if not rejecting them altogether, which suggests that a change might be in progress in this regard.

Ultimately, the extension of the M-merger approach to Basque doubled clitics offers a solid analysis of the distributional facts, based on analyses that offers adequate consideration for e.g., Case assignment. Regarding the modifications proposed, further extension of this analysis would demonstrate if these are language-specific claims or hold more broadly for the M-merger operation.

The AUX structure generated by the syntactic analysis in Chapters 3 and 4 does not correspond with the observed surface forms of AUX. Thus, Chapter 5 offers a post-syntactic analysis of AUX. This analysis is largely drawn from the analysis that Arregi & Nevins (2012) offer for the dialects of Lekeitio, Ondarru, and Zamudio; the application to the Batua AUX paradigms demonstrates the cross-dialectal viability of this account. There are some areas in which their proposal is modified, but in no way do these modifications show a fault with Arregi & Nevins' analysis. From a theoretical perspective, it is important for an analysis to be able to account for as much data as possible with minimal modification; thus, while the specifics of the

post-syntactic analysis here is not original to this dissertation, it has the benefit of offering additional support for the Arregi & Nevins approach and the novelties proposed therein.

What the post-syntactic analysis in Chapter 5 does offer is a suggestion for the implementation of operations within the DM framework. This approach to morphological analysis is still relatively new; in the literature, when specific problems are considered, the rules and operations that govern repairs are not presented with any sort of uniformity. I therefore suggest standardizing the approach to post-syntactic operations by introducing a scan-and-repair procedure, based on language-specific constraints that highlights targets structural incompatibilities, and draws from an inventory of repair strategies to rectify the structures. The output of this procedure serves as the input for subsequent repairs, which is compatible with Arregi & Nevins' innovation for the modularity of DM operations.

The theoretical analysis here offers several areas for future research. First, the nature of expletives in Basque warrants more thorough consideration, to determine the means by which expletives obtain the Phi features that I claim surface on ERG doubled clitics following M-merger. Second, the restrictions underlying PCC effects require further examination, as it is not commonly the case that a lack of specifier causes a derivation to crash. Rather, it often leads to spell out *in situ* of the item that is not able to Move; for Basque, this would suggest that 1st/2nd Person ABS arguments should be acceptable in e.g., ditransitives, but that an ABS strong pronoun doubling the argument should appear somewhere in the structure. Also related to the PCC, the analysis here is unable to extend to ABS-DAT applicative intransitives; this is an admitted drawback of the present analysis, which ideally would account for these constructions.

Finally, there are numerous constructions that the present analysis does not address. Noticeably absent from the discussion here are AUX complementizers. Chapter 2 mentioned that

AUX-final complementizers appear in some circumstances, though those constructions and the manner in which these complementizers arise was not discussed. This includes, for example, complementizer morpheme include /*(e)la/* ‘*that*’, introducing a subordinate clause, as in (1).

- (1) [Antezematen d-a [euskalduna z-ar-ela]]
 [notice L-be.3S [Basque.person 2.ABS-be.2-that]]
 ‘One notices that you are Basque’

(de Rijk, 2008, p. 451:(#35b))

In order to include these complementizers, the complex T that I associate with AUX here would have to continue to Move to C. The motivation for such movement should be explored in further detail, although given the v-to-Asp-to-T head movement already posited, continued movement to C is not surprising. Such movement would have morphological ramifications, such as the delineation of the AUX M-word, which would require reformulation of constraints to be accommodated. While this does not raise any immediate red flags for the present analysis, it would be necessary to ensure that there are no VI-related repercussions from such a reconfiguration.¹

¹ Arregi & Nevins (2012, p. 89) note that in Biscayan dialects of Basque, AUX can also include a second complementizer morpheme, which precedes the complementizer in (1) and shows the same agreement inflection as the anchor of AUX. Although the Batua AUX does not include a complementizer agreement morpheme, the analysis here is not incompatible with dialects that do show complementizer agreement. Arregi & Nevins suggest that complementizer agreement can be accounted for by positing that it is generated via post-syntactic adjunction of a morpheme matching the Phi features of T.

On the present account, post-syntactic generation of such a morpheme could be accommodated, but I claim that the Phi features that for Arregi & Nevins appear on T are actually hosted on v. The Phi features of T are ultimately unrealized, per the restrictions imposed on Agree-Copy. Therefore, a post-syntactic copying approach to complementizer agreement would have to target v, with the copy then undergoing movement via Generalized Reduplication past T, DAT clitics, and ERG clitics. However, it is notable that the agreement features realized on the complementizer are those on the anchor of AUX, i.e., are the features of the ABS argument. Therefore, complementizer agreement poses no challenge to the claim that only ABS features are eligible for Agree-Copy. In sum, although complementizer agreement does not appear in Batua,

After offering a theoretical analysis of AUX, in Chapter 6, the discussion was redirected to focus on the acquisition of the Basque AUX and Case system by second language (L2) learners, taking a generativist perspective of the language acquisition process. Specifically, the focus of investigation is on the challenge that inflectional morphology poses for L2 learners. Given this noted challenge, Basque is a particularly fertile ground for investigation with its multitude of inflectional combinations and ERG-ABS Case system, which is historically understudied in SLA. Further, there is minimal work on Basque as a target language in acquisition studies. Thus, Chapter 6 explored the little existing work on Basque L2 acquisition, both from a neurolinguistic perspective and a generativist one. This chapter also reviewed studies of the acquisition of similar constructions (e.g., doubled clitics, Agree-based inflectional morphology, overt Case marking) in other, unrelated languages.

The chapter also addresses the predictions of two competing hypotheses for the source of the challenge of inflectional morphology to L2 learners. On one hand, inability to produce nativelike inflectional morphology can be attributed to syntactic deficit. Taking the Interpretability Hypothesis (IH) (Tsimpli & Dimitrakopoulou, 2007; Tsimpli & Mastropavlou, 2007) as representative of such hypotheses, it is predicted that learners will struggle with new Case features of the L2 (ERG and ABS), and that this difficulty will surface wherever these features are present; this predicts that DP Case markers and doubled clitics will be equally prone to error. On the other hand, it is possible that L2 learners can develop nativelike syntactic representations, but that the challenge is in morphological production. Here, I considered the Morphological Underspecification Hypothesis (MUH) (McCarthy, 2008; McCarthy, 2007), which predicts that learners will establish ‘default’ feature values that will be inserted when the

the framework presented here does not preclude the generation and valuation of this morpheme, though further work is required to implement the details.

language requires more specific feature bundles. For Basque, prediction is that Phi features will be equally subject to trouble, and so learners will produce incorrect Case markers, doubled clitics, and AUX inflection.

Based on the hypotheses presented in Chapter 6, Chapter 7 presents the results of a pilot study of Basque speakers of various proficiency levels to produce target-like Case morphology and AUX forms. The study was designed to test the predictions generated by the IH and MUH, which identify different underlying causes for errors in learners' production of inflectional morphology. The experiment consisted of five tasks: the first two, a language background questionnaire and proficiency test, were used to classify participants into groups based on proficiency and experience with Basque. The remaining three tasks were designed to test participants' abilities to produce and interpret Case marking and AUX forms in present indicative monoclausal contexts. These included a suppliance task, a writing task, and a grammaticality judgment task (GJT).

Groups of comparable size could not be recruited for the study; therefore, the groups are smaller than needed to achieve statistical significance, and heavily imbalanced. The number of native speakers (NS) participants ranges from 16-21 by task; there were 8 early sequential bilinguals (ESB), 1 L2 advanced (L2A), and 2 L2 intermediate (L2I). This had a large impact on the study: specifically, none of the learner trends observed could be stated with certainty to be indicative of group behavior, and a clear picture of comparability of performance could not be achieved. However, a number of impressionistic trends were noticed that warrant further investigation. Primarily, differences in performance of the NS and ESB groups suggest these populations should remain separated in future work. If different trends in performance are observed with larger sample sizes, these results could speak to lingering effects of age of

acquisition in childhood. An overall trend correlating proficiency with accuracy was observed, though due to imbalanced groups, this was not seen for all measures. Smaller tendencies were observed for individual groups in each of the tasks, but often these trends conflicted from task to task, making it impossible to say where primary challenges were found. Further, conflicting support and counterevidence was found for both the IH and MUH. All of these minor patterns could be developed with the inclusion of larger participant groups.

These preliminary results do suggest that the tasks developed for the pilot can be used in future research, as they seem to be appropriate for different proficiency levels, and elicit the desired data. Therefore, further work will continue to advance the agenda put forth here, seeking evidence for the source of difficulty with inflectional morphology. New research questions more closely investigating initial trends or more complex structures can be developed based on findings from a larger population.

This dissertation has taken on two large issues pertaining to the Basque AUX, from two different linguistic perspectives. The majority of the dissertation focused on the syntactic and morphological derivation of AUX, motivated by providing a strong analysis for clitic doubling. Having established such an analysis, the dissertation also explored how the AUX – and by association, the Case system – of Basque could be acquired by adults learners. To this end, a pilot study was developed and run. The results of this pilot, while not wholly generalizable, will guide continued investigation into the acquisition of the Basque AUX.

APPENDIX A: Experimental Materials

TASK 1: Language Background Questionnaire (LBQ)

The LBQ was presented to participants in Spanish; English translations are provided for reference. The astrisk indicates that a response was required.

Cuestionario / *Questionnaire*

¿Cómo se llama?* / *What is your name?*

¿Cuándo es su cumpleaños? (dd/mm/aaaa)* / *What is your birthday? (dd/mm/yyyy)*

¿Cuál es su género?* / *What is your gender?*

- Femenino / *Female*
- Masculino / *Male*

¿Está matriculado/a en la escuela?* / *Are you enrolled in school?*

- Sí / *Yes*
- No / *No*

Por favor indique el nivel en el cual está matriculado/a.* / *Please indicate the level of schooling in which you are enrolled.*

- Instituto
- Módulo de Grado Medio
- Módulo de Grado Superior
- Universidad (licenciatura)
- Universidad (master)
- Universidad (doctorado)

Por favor indique el nivel máximo de escuela que obtuvo.* / *Please indicate the maximum level of schooling you have obtained.*

- Algo del instituto / *Some instituto*
- Diploma del instituto / *Completed instituto*
- Algo de Módulo de Grado Medio
- Diploma de Módulo de Grado Medio
- Algo de Módulo de Grado Superior
- Diploma de Módulo de Grado Superior
- Algo del Universidad (licenciatura)
- Diploma del Universidad (licenciatura)
- Algo del Universidad (master)
- Diploma del Universidad (master)
- Algo del Universidad (doctorado)
- Diploma del Universidad (doctorado)

¿Cuál es la diploma más avanzada que obtuvo?* / *What is the most advanced diploma you have obtained?*

¿En qué año obtuvo esta diploma?* / *In what year did you obtain this diploma?*

¿Cuál es su lengua nativa?* / *What is your native language?*

¿Con cuántos años empezaste a aprender euskera?* / *How many years have you been learning Basque?*

¿En qué idiomas te hablaban tus padres, familiares o niñeras cuando eras niño/a?* / *What languages did your parents, relatives, or caregivers speak when you were a child?*

¿En qué contexto comenzó a aprender el euskera? (p.ej., ¿en la escuela, de un familiar/canguero/amigo, autodidacta?)* / *In what context did you begin learning Basque? (e.g., in school, with family/friends, self-taught)*

¿Qué lenguas habla? Por favor rellene el cuadro abajo sobre su historia lingüística personal (incluso su lengua nativa y el euskera).* / *What language(s) do you speak? Please describe your personal language background (including your native language and Basque)*

	Lengua / Langauge	¿Cómo evaluaría su competencia? (Elija de lo siguiente: nativo, casi-nativo, avanzado, intermedio, o principiante.) <i>How do you rate your proficiency? (Select one of the following: native, near-native, advanced, intermediate, or beginner)</i>
Lengua No. 1 / <i>Lang #1</i>		

¿Habla otras lenguas?* / *Do you speak another language?*

Sí / *Yes*

No / *No*

¿Qué lenguas habla? Por favor rellene el cuadro abajo sobre su historia lingüística personal (incluso su lengua nativa y el euskera).* / *What language(s) do you speak? Please describe your personal language background (including your native language and Basque)*

	Lengua / Langauge	<p>¿Cómo evaluaría su competencia? (Elija de lo siguiente: nativo, casi-nativo, avanzado, intermedio, o principiante.) ¿Cómo evaluaría su competencia? <i>How do you rate your proficiency? (Select one of the following: native, near-native, advanced, intermediate, or beginner)</i></p>
Lengua No. 2 / Lang. #2		

¿Habla otras lenguas?* / Do you speak another language?

- Sí / *Yes*
 No / *No*

¿Qué lenguas habla? Por favor rellene el cuadro abajo sobre su historia lingüística personal (incluso su lengua nativa y el euskera).* / *What language(s) do you speak? Please describe your personal language background (including your native language and Basque)*

	Lengua / Langauge	<p>¿Cómo evaluaría su competencia? (Elija de lo siguiente: nativo, casi-nativo, avanzado, intermedio, o principiante.) ¿Cómo evaluaría su competencia? <i>How do you rate your proficiency? (Select one of the following: native, near-native, advanced, intermediate, or beginner)</i></p>
Lengua No. 3 / Lang. #3		

¿Habla otras lenguas?* / Do you speak another language?

- Sí / *Yes*
 No / *No*

¿Qué lenguas habla? Por favor rellene el cuadro abajo sobre su historia lingüística personal (incluso su lengua nativa y el euskera).* / *What language(s) do you speak? Please describe your personal language background (including your native language and Basque)*

	Lengua / Langauge	¿Cómo evaluaría su competencia? (Elija de lo siguiente: nativo, casi-nativo, avanzado, intermedio, o principiante.) ¿Cómo evaluaría su competencia? <i>How do you rate your proficiency? (Select one of the following: native, near-native, advanced, intermediate, or beginner)</i>
Lengua No. 4 / Lang. #4		

¿Durante cuántos meses/años ha estudiado el euskera?* / *How long have you studied Basque?*

	¿Cuántos? <i>How Many?</i>	¿Meses o Años? <i>Months or years?</i>
Durante... <i>For...</i>		

¿Cuántas horas estima usted que estudia el euskera para clase cada semana?* / *How many hours do you study Basque for class each week?*

(Por favor, no incluso las horas dentro de clase) / *(Please do not include hours spent in class)*

- 0-3 horas / *hours*
- 3-6 horas / *hours*
- 6+ horas / *hours*
- N/A

Por favor describa sus hábitos de estudio de lengua.* / *Please describe your langauge study habits.*

¿Por qué está matriculado/a en la clase de euskera?* / *Why are you enrolled in Basque classes?*

- Requisito de lengua extranjera / *Foreign langauge requirement*
- Interés personal / *Personal interest*
- Otra razón académica (especifique) / *Other academic reason (specify)*
- Otra razón personal (especifique) / *Other personal reason (specify)*

Si otra razón, especifique.* / *If another reason, specify.*

¿Utiliza el euskera fuera del aula?* / *Do you use Basque in your daily life?*

- No / *No*
- Sí / *Yes*

¿Con qué frecuencia (horas/semana) utiliza el euskera?* / *With what frequency (hours/week) do you use Basque?*

¿En qué circunstancias utiliza el euskera?* / *In what circumstances do you use Basque?*

(Describa por qué y con quién utiliza su segunda lengua fuera del aula.) / *(Describe why and with whom you use your second language in daily life)*

TASK 2: Proficiency Test (Rodríguez-Ordóñez, to appear)

This task was presented in Basque. An asterisk indicates a response was required.

Test Preliminar/Atariko Froga / *Preliminary Test*

Jaiki ohetik, seme, bazkaltzeko ordua da! *

- Itxaron, ama, oso berandu sartu naiz ohean.
- Itxaron, ama, oso berandu sartuko naiz ohean.
- Itxaron, ama, oso berandu sartzen naiz ohean.

Egia al da Gorbea mendia erre dela? *

- Bai, ezer entzun dut.
- Bai, zer entzun dut.
- Bai, zerbait entzun dut.

Zer esan dizu medikuak?*

- Kirola egitea.
- Kirola egiteko.
- Kirola egiten.

Bai, ni lehenengo etxebizitzan bizi naiz, eta anaia goiko etxebizitzan. *

- Beraz, zure anaia bian bizi da.
- Beraz, zure anaia bigarren bizi da.
- Beraz, zure anaia bigarreanean bizi da.

Zein multzotan dago hitz bat tokiz kanpo? *

- gaur, atzo, bihar, etzi, etzidamu.
- gona, galtzerdiak, soinekoa, izterra.
- kopeta, belarria, lepoa, sudurra, begia.

Gustatu zait Menchu Gal artistaren erakusketa.*

- Nolako koloreak erabiltzen ditu!
- Nolako koloreak erabiltzen dituela!
- Nolako koloreak erabiltzen dituen!

Ados nago _____.*

- bileran esandakoa.
- bileran esandakoak.
- bileran esandakoarekin.

_____ guraso eta seme-alaben artean ondo moldatzea! *

- Hau zaila
- Zein zaila da
- Zein zaila den

Zein multzotan dago hitz bat tokiz kanpo? *

- Altua, isila, jatorra, eskuzabala.
- Irakaslea, erizaina, arotza, ostalaria.
- Izeba, amaginarreba, koinatua, ahizpa.

Bihar ezin dut, baina _____.*

- beste egun batean gera gaitzke.
- beste eguna gera gaitzke.
- beste egunean gera gaitzke.

Ba, nire andregaiari ez _____ asko gustatu pelikula hori. *

- zait
- zion
- zitzaion

Gidabaimena ateratzea hain erraza _____, ez _____ hainbeste lagunek huts egingo. *

- bada / du
- balitz / luke
- balitz / zen

Eraman _____ fotokopia hauek Andoniri, zain dago eta! *

- diezazkiozun
- iezazkiozu
- itzazu

Gazteek ez diote euren buruari baino begiratzen. Oso _____ dira. *

- berekoiak
- burutsuak
- lotsatiak

Euri-zaparraden ondorioz, _____ izan dira Levante aldean, eta herri asko argirik gabe geratu dira. *

- lehorreak
- uholdeak
- urtegiak

Ziri galanta sartu digu denoi! Hots: *

- Animuak eman dizkigula.
- Damutu egin zaigula.
- Engainatu egin gaituela.

Lankideekin al zoaz oporretara? Aukeratu erantzun egokia. *

- Lankideekin? Ezta ametsetan.
- Lankideekin? Ezta pentsatu ere.
- Lankideekin? Zoratuta nagoela.

Emango _____ pozik, zuk zeureak utziko _____.*

- nizun / bazenizkidan
- dizkizut / bazenizkit
- nizkizuke / bazenizkit

Horrek ez du batere zentzurik. Esanahia:*

- ez du ez hankarik ez bururik.
- buruan haizea baino ez du.
- ez da ez ur ez ardo

Zein dago gaizki? Harrigaria badirudi ere, horixe gertatu da.*

- Ez da izango!
- Ez ezezu esan!
- Esatea ere!

Pozarren gindoazen Miren bisitatzera. Nik _____ izugarrizko ilusioa nuen.*

- gutxienez
- bidenabar
- aitzitik

"Zergatik ez diozu itzuli bere dirua?"*

- Harexegatik
- Zergatik ez!
- Horratik!

TASK 3: SUPPLIANCE TASK

These sentences were presented to participants in Basque. An asterisk indicates a required response.

EXAMPLES:

Escribe la palabra correcta/Hitz egokia aurkitu / *Write the correct word.*

Aquí, la oración está completada cuando añadimos la terminación *ri* a la palabra *ni*.
Esaldi hau bukatzeko *ri* deklinabidea gehitu behar diozu *ni* hitzari.
Here, the sentence is completed by adding the ending ri to the word ni.

Ejemplo No. 1

Zuk ni ___ ogia eman didazu gaur.*

Aquí la oración está completa cuando añadimos la palabra *dizut*.
Esaldi hau bukatzeko *dizut* hitza gehitu behar izan dugu.
Here the sentence is completed by adding the word dizut.

Ejemplo No. 2:

Zuk niri ogia eman _____ gaur.*

TASK QUESTIONS:

- Gizon ___ emakumea ikusi du gaur.*
- Emakumeak ur ___ edan du dagoeneko.*
- Umeak ogia jan _____ mahaian.*
- Nesk _____ kutxa astindu du bortizki.*
- Poliziak politikari _____ atxilotu du bulegoan.*
- Sukaldariak fruta ebaki _____ zatitan.*
- Ehiztariak untxia harrapatu _____ tranpan.*
- Merkatariak paketea lotu _____ kordelarekin.*
- Bizarginak gizonaren bizara moz ___ du goizean.*
- Margolariak koadroa uki ___ du museoan.*
- Erizainak pazientearen hatza ziza ___ du nekez.*
- Andre ___ liburuak irakurri ditu sofán.*
- Irakasleak prob ___ egin ditu eskolan.*
- Ikasleak istorioak idatzi _____ liburutegian.*
- Meatzari ___ tunelak zulatu ditu mendian.*
- Lapurrak belarritako ___ ostu ditu etxetik.*
- Senarrak loreak erosi _____ dendan.*
- Bankariak zorrak ordaindu _____ bankuan.*
- Soldaduak zaldiak saldu _____ merkatuan*
- Gazteak autoak utz ___ ditu errepidean.*
- Amak arropak toles ___ ditu umeentzat.*
- Kandidatuak erantzunak asma ___ ditu elkarrizketan.*

Soldadu ____ horma eraiki dute mendian.*
Marinelek ontzi ____ garbitu dute elkarrekin.*
Mutikoek jokoa jokatu ____ zelaian.*
Emakume ____ estalkia josi dute haurrarentzat.*
Kazetariak txosten ____ egin dute bulegoan.*
Idazlariek fitxategia eratu ____ bulegoan.*
Gizonek egurra txikitu ____ baserrian.*
Artzainek egurra erre ____ larrean.*
Arrantzaleek ontzia honda ____ dute ekaitzean.*
Umeek etxea suntsi ____ dute ilusioz.*
Nerabeek dirua gasta ____ dute dendan.*
Baserritarr ____ behiak elikatu dituzte ukuiluan.*
Ameek haurr ____ jostatu dituzte kantuekin.*
Langileek etxeak margotu ____ goizean.*
Sukaldari ____ tomateak txikitu dituzte sukaldean.*
Politikariak herri ____ triskatu dituzte berriro.*
Irakasleek kafeak zurrupatu ____ jolastorduan.*
Gonbidatuek tartak jan ____ afaritarako.*
Alkateek hitzaldiak bota ____ plazan.*
Jeneralek karpak eraik ____ dituzte kanpamentuan.*
Musikariak eszenatokiak garbi ____ dituzte lixibarekin.*
Ikasleek arraultzak gosat ____ dituzte goizean.*

TASK 4: Writing Task

The prompts were presented to participants in Basque. English translations are provided. An asterisk indicates a response is required.

Escritura/Idazmena / *Writing*

Zure eguneroko ekintzak deskribatu.* / *Describe your daily routine.*

Imajinatu lanpostu bateko nagusia zarela eta langile berri bat etorri zaizu gaur. Esaiozu langile berriari zer egin behar duen. / *Pretend you are an employer, and you have a new employee starting today. Explain to the employee what her responsibilities will be.*

Erabili “zu” langilearengana zuzentzerakoan* / *Use zu to address your employee.*

Nola ospatzen duzue zuk eta zure familiak zuen jaiegun gogokoena?*/ *How do you and your family or friends celebrate your favorite holiday?*

Imajina ezazu irakaslea zarela eta klaseko lehenengo egunean zaude zure ikasleekin; esaiezu semestre honetan zer egin behar duten. / *Pretend you are a teacher addressing a group of students on the first day; tell them what they will learn about in your class.*

Erabili “zuek” ikasleengana zuzentzerakoan.* / *Use zuek to address the students.*

TASK 5: Grammaticality Judgment Task (GJT)¹

Sentences were presented to participants in Basque. Participants were asked to rate the question on a scale of 1 (completely unacceptable) to 5 (completely acceptable), and provide a correction for a rating of 3 or lower. An asterisk indicates a response is required.

Ejercicio de aceptabilidad/Okerrak zuzentzen / *Acceptability task*

INTRANSITIVE UNGRAMMATICAL

- Umeak bakarrik igo da mendian gora*
- Emakumeak etxetik irten da ziztu bizian*
- Guk Parisera abiatu gara bidaian*
- Umeek goiz jaiki dira gaur*
- Ni goiz jaiki da gaur*
- Gu elizan egon da eguerdian*
- Zuek hitzaldira etorri da arratsaldean*
- Zuek elkarrekin ibili da paseatzen*

INTRANSITIVE GRAMMATICAL

- Ni dendan erori naiz gaur*
- Zu kalean ibili zara isilpean*
- Zu berehala irten zara etxetik*
- Gizona ibaira erori da gaur goizean*
- Gu azkar irten gara gelatik*
- Zuek mozkortuta irten zarete tabernatik*
- Irakasleak klasean eseri dira elkarrekin*
- Gizonak dendara joan dira oinez*

TRANSITIVE UNGRAMMATICAL

- Nik umea eraman du elizara*
- Zuk ni autoz eraman nau lanera*
- Guk zu ikusi zaitu dendan*
- Zuek gu ahaztu gaitu huartzarotik*

¹ Some of the stimuli used in this experiment were modified from those of Zawiszewski & Friederici (2009), and were used with permission and gratitude.

Gizonek gailetak azkar jan ditu gosaltzeko*
Zuk ni ondo astindu duzu gaur*
Irakasleak gu hauteman du klasean*
Guk zu bultzatu dugu ilaran*
Lagunek ni bisitatu dute neguan*
Ni txakurra ikusi dut kalean*
Zu ni bakarrik utzi nauzu kalean*
Maite gu ikusi gaitu ospitalean*
Ni erlojuak konpondu ditut aitonarentzat*
Zuk guk aurkitu gaituzu parkean*
Anak nik ikusi nau klasean*
Guk Jonen onartu dugu bulegoan*
Zuk guk pagatu gaituzu dirutan*

TRANSITIVE GRAMMATICAL

Nik zu bultzatu zaitut tabernan*
Nik zuek urrun bidali zaituztet gaur*
Nik liburua idatzi ditut isilpean*
Zuk etxea utzi duzu betiko*
Zuk zorrak ordaindu dituzu bankuan*
Ainhoak zu aurkeztu zaitu bileran*
Kapitainak ontzia hondatu du tamalez*
Guk bilera antolatu dugu dagoeneko*
Guk zuek eraso zaituztegu gauez*
Zuek ni lotu nauzue zuhaitzera*
Zuek lizentzia eskuratu duzue negoziarako*
Zuek autoak suntsitu dituzue errepidean*
Merkatariek koadroa lapurtu dute dendatik*
Ikasleak gu agurtu gaituzte kalean*
Zuk ni indarrez bota nauzu lurrera*
Guk zu hartu zaitugu etxean*
Lapurrek txanponak ostu dituzte bankutik*

DITRANSITIVE UNGRAMMATICAL

Nik lagunei etxeak saldu dizkiot duintasunez*
Zuk guri galdera erantzun diozu gaur*
Guk zuri kondairak kontatu dizkiogu gauez*
Nik zu txakurrak deitu dizkizut berriro*
Zuk ni olagarroak saldu dizkidazu afaltzeko*
Kepak gu txakurra saldu digu baserriko lanetarako*
Zuek ni txakurra poztasunez erakutsi didazue baserrian*

Laurak niri behiari merke saldu dit merkatuan*
Umeeek zuri zaldiei merke eskeini dizkizute baserrian*
Gizonek guri txakurrei eman dizkigute oraingo*
Guk zuei katuei erakutsi dizkizuegu irudian*
Niri zuei mezuak azkar ekarri dizkizuet gaurkoan*
Zuri langileari planak kontatu dizkiozu fabrikan*
Zuri guri tarta eman diguzu gabonetan*
Guri zuri sendagaiak eskeini dizkizugu ospitalean*

DITRANSITIVE GRAMMATICAL

Nik zuri oparia eman dizut gaur*
Nik langileari edariak eskeini dizkiot soroan*
Nik zuei musua eskeini dizuet dagoeneko*
Nik harakinei haragia saldu diet merkatuan*
Zuk niri argazkiak erakutsi dizkidazu etxean*
Zuk idazleari istorioa kontatu diozu egunkarian*
Emakumeak gonbidatuari burukoak eman dizkio gauean*
Medikuak gaixoari pilula eskeini dio ospitalean*
Postariak guri paketea ekarri digu elurretan*
Mateok umeei janaria eskaini die sukaldean*
Guk zuri erakusketak erakutsi dizkizugu aurretik*
Guk zuri zurrumurrua kontatu dizugu jaialdian*
Guk zuei saragarra ekarri dizkizuegu baserritik*
Zuek niri sekretuak azkar kontatu dizkidazue*
Zuek guri ogia eskeini diguzue mahaian*

APPENDIX B: Individual Participant Analysis

This index offers details of the performance of individuals in the native speaker (NS) and early sequential bilingual (ESB) participant groups on the suppliance task, writing task, and grammaticality judgment task (GJT).

1 Suppliance Task

Participant ID	DP % CORRECT			AUX % CORRECT	TOTAL % CORRECT	
	SUBJECT	OBJECT	TOTAL			
NS	5	100%	100%	100%	100%	
	6	100%	100%	100%	100%	
	16	100%	100%	100%	100%	
	17	100%	100%	100%	100%	
	19	100%	100%	100%	100%	
	27	100%	100%	100%	100%	
	26	100%	100%	100%	94%	97%
	28	100%	100%	100%	94%	97%
	1	100%	88%	94%	94%	94%
	12	100%	88%	94%	94%	94%
	18	88%	100%	94%	94%	94%
	21	100%	88%	94%	94%	94%
	MEDIAN	100%	100%	94%	94%	94%
	AVERAGE	93%	93%	93%	89%	91%
	4	88%	88%	88%	94%	91%
	7	100%	100%	100%	81%	91%
	8	100%	88%	94%	88%	91%
	22	100%	88%	94%	88%	91%
	25	88%	88%	88%	94%	91%
	11	88%	88%	88%	81%	84%
30	100%	100%	100%	69%	84%	
23	88%	88%	88%	75%	81%	
32	25%	63%	44%	38%	41%	
ESB	9	100%	100%	100%	100%	
	10	100%	100%	100%	100%	
	31	100%	100%	100%	100%	100%
	AVERAGE	95%	100%	98%	92%	95%
	2	88%	100%	94%	94%	94%
	3	100%	100%	100%	88%	94%
	20	100%	100%	100%	88%	94%
	24	100%	100%	100%	88%	94%
	MEDIAN	100%	100%	100%	91%	94%
14	75%	100%	88%	81%	84%	

2 Writing Task

Participant ID		AUX % CORRECT	TOTAL SUBJ % CORRECT	OBJ (ABS) % CORRECT	INDIR OBJ (DAT) % CORRECT	TOTAL % CORRECT
NS	1	100%	100%	100%	-*	100%
	4	100%	100%	100%	-	100%
	5	100%	100%	100%	-	100%
	6	100%	100%	100%	-	100%
	7	100%	100%	100%	-	100%
	8	100%	100%	100%	-	100%
	11	100%	100%	100%	-	100%
	12	100%	100%	100%	100%	100%
	16	100%	100%	100%	-	100%
	17	100%	100%	100%	-	100%
	18	100%	100%	100%	100%	100%
	19	100%	100%	100%	-	100%
	21	100%	100%	100%	-	100%
	22	100%	100%	100%	-	100%
	25	100%	100%	100%	100%	100%
	26	100%	100%	100%	-	100%
	27	100%	100%	100%	-	100%
	28	100%	100%	100%	-	100%
	30	100%	-	100%	-	100%
	AVERAGE	100%	99%	100%	100%	100%
23	100%	83%	100%	-	97%	
ESB	2	100%	100%	100%	-	100%
	3	100%	100%	100%	-	100%
	10	100%	100%	100%	-	100%
	31	100%	100%	100%	-	100%
	AVERAGE	100%	92%	100%	100%	98%
	9	100%	93%	100%	100%	97%
	14	100%	89%	100%	-	97%
	24	100%	92%	100%	-	97%
20	100%	60%	100%	-	94%	

* A cell containing a dash (-) indicates that the participant did not produce any tokens of the column type.

3 Grammaticality Judgment Task

Participant ID		DP CASE MARKING % CORRECT	AUX % CORRECT	GRAMMATICAL % CORRECT	TOTAL % CORRECT
NS	16	100%	100%	100%	100%
	12	96%	100%	100%	99%
	26	100%	100%	98%	99%
	6	100%	100%	97%*	99%
	23	100%	100%	97%*	99%
	17	100%	100%	95%	98%
	22	96%	100%	97%*	97%
	21	96%	100%	97%*	97%
	25	100%	100%	93%	96%
	8	88%	94%	100%	95%
	5	100%	100%	90%	95%
	AVERAGE	96%	99%	93%	95%
	19	100%	100%	88%	94%
	7	92%	100%	90%	93%
	4	88%	100%	93%	93%
	18	100%	88%	90%*	92%
	11	88%	100%	87%*	90%
ESB	10	100%	100%	98%	99%
	31	96%	100%	100%	99%
	9	91%*	100%	98%	96%
	3	88%	87%*	100%	94%
	2	78%*	100%*	98%	92%
	AVERAGE	85%	96%	93%	91%
	24	92%	100%	83%	89%
	20	100%*	100%	78%	89%
	14	52%*	94%	90%	80%

* Scores in this table marked with an asterisk indicates that one or more of the answers for this participant was disqualified, as it could not be scored as correct or incorrect. Therefore, the total number of responses for this participant is lower than the total of 80. The overall score (TOTAL % CORRECT) is based on the number of scorable answers.

(NS6, NS22, NS18, NS11, ESB3, ESB 20, ESB 14: $n = 79$; NS21, ESB9, ESB2: $n = 78$)

APPENDIX C: Glossary of Abbreviations/Glosses

1	1 st Person
2	2 nd Person
3	3 rd Person
2L1	Second first language
ABS	Absolutive
ACC	Accusative
AgrP	Agreement Phrase
AGRIOP	Indirect Object Agreement Phrase
AoA	Age of Acquisition
AppIP	Applicative Phrase
AspP	Aspect Phrase
AUX	Auxiliary
BAC	Basque Autonomous Community
cL2	Childhood second language
CP	Complementizer Phrase
DAT	Dative
DEF	Definite
DM	Distributed Morphology
DP	Determiner Phrase
EA	External Argument
ECM	Exceptional Case Marking
ESB	Early Sequential Bilingual
ERG	Ergative
ERP	Event Related Potential
FFF	Failed Functional Features
FRH	Feature Reassembly Hypothesis
GB	Government & Binding
GR	Generalized Reduplication
GJT	Grammaticality Judgment Test
IH	Interpretability Hypothesis
IMPF	Imperfective
INF	Infinitival
KP	(K)ase Phrase
L1	First Language
L2	Second Language
L2A	Advanced L2 (learner)
L2I	Intermediate L2 (learner)
LBQ	Language Background Questionnaire
LDA	Long Distance Agreement
LF	“Logical Form”
LI	Lexical Item
LOC	Locative (Basque adposition/semantic case marker)
M-word	Morphological Word

MS	Morphological Structure
MSIH	Missing Surface Inflection Hypothesis
MUH	Morphological Underspecification Hypothesis
NMZR	Nominalizer
NOM	Nominative
nP	Little N Phrase
NP	Noun Phrase
NS	Native Speaker
OV	Object Verb
OSV	Object-Subject-Verb
PartP	Participant Phrase
PCC	Person-Case Constraint
PERF	Perfective
PF	“Phonological Form”
P	Plural
PP	Prepositional/Postpositional Phrase
S	Singular
SD	Standard Deviation
SLA	Second Language Acquisition
SOV	Subject – Object – Verb
Spec	Specifier
SV	Subject-Verb
TP	Tense Phrase
UG	Universal Grammar
VI	Vocabulary Item
v-N	v-Noninitiality
vP	Little V Phrase
VP	Verb Phrase
vPEN	v-Peninitiality
VBZR	Verbalizer
π	Person feature
#	Number feature
ϕ	Phi features

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