

## CHAPTER 2: THE AMHARIC DEFINITE MARKER AND CYCLICITY

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## 1 INTRODUCTION

In Minimalism, the cyclicity of syntactic operations is encoded in two assumptions: cyclic spell-out by phase, and phase impenetrability. Cyclic spell-out by phase ensures that the spell-out domain of a phase is sent to PF immediately after the phase is built. The effect of phase impenetrability is that, after spell-out, the spell-out domain is no longer accessible to syntactic operations, i.e. the cycle is complete. Because of the close connection with spell-out, these two assumptions raise questions about cyclicity at PF, especially when assuming the articulated model of PF used in Distributed Morphology (Halle 1990, Halle and Marantz 1993, et al.). For example, consider a phase embedded within another phase. When the larger phase is sent to PF, can morphological operations (Lowering, Local Dislocation, etc.) still affect the embedded phase, which was spelled out during the previous cycle? More succinctly, is there phase impenetrability at PF?

Embick (2007) suggests that some morphological operations do apply cyclically, and can bleed later operations. Here I build on Embick's insight and connect it to phase impenetrability, using evidence from definite marking in Amharic. I argue that if a phase has been spelled out at an earlier stage of the derivation, it is impenetrable to morphological operations at later spell-outs, i.e. the Phase Impenetrability Condition (Chomsky 2000, 2001, 2004) applies to both syntactic and morphological operations.

The empirical focus of the investigation is the definite marker in Amharic, which surfaces in a variety of positions that would be unexpected if it were the realization of D. However, its distribution can be easily accounted for by assuming that D undergoes Local Dislocation (Embick and Noyer 2001, Embick 2007) and that Local Dislocation is sensitive to phase impenetrability. There is also evidence that, when the definite marker is optional, it is not a realization of D but the reflex of a definiteness agreement process. The evidence for and analysis of definiteness agreement is discussed in detail in Chapter 3.

Although the emphasis is on cyclicity, the facts here are also relevant for investigating the level of separation between syntax and morphology. I argue that the definite marker is a second position clitic within DP, and this raises the question of when and how its cliticization occurs. I argue for a morphological account of the position of the definite marker, demonstrating that syntactic (and phonological) analyses fall short in a number of ways, both theoretical and empirical.

This research is connected to recent work on definite markers in Scandinavian languages (Hankamer and Mikkelsen 2005, Heck, Müller and Trommer 2007) and in Bulgarian (Embick and Noyer 2001, Dost and Gribanova 2006, Biskup 2007). I follow many of these works in using Distributed Morphology and/or phases to account for complex patterns of definite marking. There has also been much recent work on the internal syntax of the Amharic DP (Demeke 2001, Ouhalla 2004, den Dikken 2007), and the connection between this research and definite marking is discussed in Section 3. The primary descriptive work of the chapter is in Section 2, which contains the data on obligatory and optional definite marking. In Section 3, besides examining the recent work on the Amharic DP, I discuss previous accounts of definite marking and how to approach an analysis of definite marking in general. The analysis of obligatory definite marking is presented in Section 4, and the analysis is supported by additional data in Section 5. Section 6 concludes.

## 2 DEFINITE MARKING

### 2.1 Starting Point

Indefinite nominals are generally unmarked in Amharic, but definite nominals are always marked by a suffix called the definite marker, as shown in (1).

- |     |           |                        |
|-----|-----------|------------------------|
| (1) | a. bet-u  | b. nɪgɪst-wa           |
|     | house-DEF | queen-DEF.F            |
|     | the house | the queen <sup>1</sup> |

The morphophonology of the definite marker is straightforward. There are two main allomorphs for singular nouns, and they depend on gender: *-u* for masculine nouns (with allophone *-w* after vowels), and *-wa* for feminine nouns. Plural nouns uniformly take the masculine allomorph.

The morphosyntax of the definite marker is much less straightforward. It does not appear only on the nominal stem, as in (1). It also does not appear where the syntactic D head is predicted to occur, i.e. at the edge of the DP (which edge depending on whether DP is right- or left-headed). In this section, I present the complex data on where the definite marker attaches within the DP, focusing on drawing out the patterns that hold across the data.

As a starting point, it is clear that the definite marker is a morphophonologically dependent element -- it must be attached to other material and can never stand on its own. However, it is important to clear up my assumptions about dependent items, and specifically, about the terms “affix” and “clitic.” An intuitive characterization of the difference between affixes and clitics is that affixes have a closer relationship with their stems than clitics, and many tests have been proposed to distinguish between the two (Zwicky and Pullum 1983; Miller 1992a). A standard theoretical treatment is that affixes are attached to their stems in the lexicon, whereas clitics are added to their stems post-lexically or even post-syntactically. Distributed Morphology, however, specifically rejects Lexicalism and lexical composition, and thus the conventional difference between clitics and affixes. In DM, prosodically and morphologically dependent items can be attached to their stems in a variety of ways, and the labels “clitic” and “affix” become descriptive terms for some of these ways, and not primitive categories (see e.g., the discussion in Embick and Noyer 2001). I thus refer to *-u* ~ *-wa* neutrally as a definite marker. Below, I use the term ‘second position clitic,’ but intend it merely as descriptive shorthand for a well-known set of behavior, and not as an analytical commitment of any kind.

As a morphophonologically dependent item, the definite marker requires a host to its left (in conventional terms, it is a suffix or an enclitic). In the simplest pattern of definite marking, if a DP contains only a nominal head N, then the definite marker attaches to the right of N.

- |     |                      |
|-----|----------------------|
| (2) | a. bet-u ‘the house’ |
|     | b. *u-bet            |

The definite marker must attach within the DP. It cannot attach to a preceding preposition, even if that preposition takes the DP as a complement, as in (3)b.

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<sup>1</sup> Gloss abbreviations: 3 - third person; ABL – ablative; ACC – accusative; C - complementizer; DEF - definite marker; F -feminine; GEN – genitive; IMPF – imperfective aspect; L – linker; M - masculine; PF - perfective aspect; PL - plural; S - singular. To transcribe vowels, I use the conventions in Demeke 2003, Appendix II. Consonants are uniformly in IPA except for the palatal glide which is transcribed as [y], not [j].

- (3) a. Tɨgɨst wädä bet-u hed-ätʃtʃ  
 Tɨgɨst to house-DEF go.PF-3FS  
 Tɨgɨst went to the house.

b. \*Tɨgɨst wädä-w bet hed-ätʃtʃ **Attached to Preposition**

Moreover, the definite marker cannot attach to any random syntactic material that precedes the DP, such as an adverb or a different DP.

- (4) a. Tɨgɨst tɨnantɨnna bet-u-n ayy-ätʃtʃ  
 Tɨgɨst yesterday house-DEF-ACC see.PF-3FS  
 Tɨgɨst saw the house yesterday.

b. \*Tɨgɨst tɨnantɨnn-w-ɨn bet ayy-ätʃtʃ **Attached to Adverb**

- (5) a. t'ɨk'k'ur-u dɨmät bet-u ayy-ä  
 black-DEF cat house-DEF see.PF-3MS  
 The black cat saw the house.

b. \*t'ɨk'k'ur-u dɨmät-u bet ayy-ä **Attached to Different DP<sup>2</sup>**

At the most basic analytical level, then, it can be said that the definite marker is a morphophonologically dependent item that needs a host to its left, and its domain of attachment is DP.

## 2.2 Core Data

As discussed above, when the DP contains only a nominal head N, then the definite marker attaches to N. However, if there is any other material in the DP, the definite marker can no longer attach to N. This section presents the data on definite marking when adjectival clauses and relative clauses precede the nominal stem. These constitute the core cases in that they show a clear and consistent attachment pattern for the definite marker. Demonstratives and possessors are discussed in 2.3, and other material (e.g. complements) is not treated here.<sup>3</sup>

If the DP contains an AP (all APs are prenominal), then the definite marker attaches to the right edge of AP.

- (6) a. tɨllɨk'-u bet big-DEF house 'the big house'  
 b. t'ɨk'k'ur-u dɨmät black-DEF cat 'the black cat'

If the AP is complex, the definite marker still attaches to the right edge of the AP. For example, it does not attach to degree adverbials (intensifiers), even when the same degree adverbial is repeated or when there are multiple degree adverbials.

<sup>2</sup> This example is grammatical with the interpretation: "his black cat saw a house." The third person singular possessive suffix and the definite marker are homophonous.

<sup>3</sup> It is difficult to investigate the placement of the definite marker with respect to nominal complements and other kinds of adjuncts. Most complements are possessors (see below), and Amharic does not have DP-internal adjuncts that are not APs or CPs. DPs like "the book on the table" are expressed using a relative clause, and DPs like "the flight tomorrow" are expressed using a possessive: "tomorrow's flight." From a typological perspective, the similarly SOV language Turkish has the same properties (Jorge Hankamer, p.c.).

- (7) a. [bät'am tɪllɪk'-u]<sub>AP</sub> bet            very big-DEF house  
 b. [bät'am bät'am tɪllɪk'-u]<sub>AP</sub> bet    very very big-DEF house  
 c. [ɪdʒɪg bät'am tɪllɪk'-u]<sub>AP</sub> bet    really very big-DEF house
- (8) \* [bät'am-u tɪllɪk']<sub>AP</sub> bet            very-DEF big house

The definite marker also attaches to the adjective if the adjective has a complement.

- (9) [lä-mist-u tammaññ-u]<sub>AP</sub> gäs'ābahriy  
 to-wife-his faithful-DEF character  
 the faithful-to-his-wife character

Gradability does not affect definite marking. The definite marker still attaches to the right edge of a non-gradable adjective, as with the adjective *wanna* “main/chief,” and with an ordinal numeral.

- (10) a. wanna-w märmari                      b. hulättäñña-w bet  
 chief-DEF detective                      second-DEF house  
 the chief detective                      the second house

It is difficult to determine at this point whether the definite marker is targeting the right edge of AP, or whether it is targeting the adjectival head, since the adjectival head is always at the right edge of its phrase. I will generally refer to the definite marker as attaching to the right edge of AP (and other phrasal constituents) henceforth for concreteness.

Definite-marking patterns with relative clauses are similar. If the DP contains a relative clause, the definite marker attaches to the right edge of the CP. A simple example is in (11).

- (11) yä-särräk'-ä-w            ɪdʒdʒ  
 C-steal.PF-3MS-DEF child  
 the child who stole

Amharic relative clauses contain finite verbs, and have the same word order as main clauses (SOV). There are no *wh*-words, but there is a complementizer *yä-*. The relative clause in (11) consists only of a verb (which is made up of a verbal stem, an agreement morpheme, and the dependent complementizer), and the definite marker *-w* attaches to the right edge of the verb. The definite marker always attaches to the finite verb when it attaches to relative clauses because there is a strict requirement that the finite verb be final, which is common among SOV languages.

If the relative clause is more complex, the definite marker still attaches to the right edge, and this is demonstrated in (12). The definite marker attaches to an adjunct in (12)a, an argument in (12)b, and an embedded CP in (12)c.

- (12) a. [ɪnantɪnna yä-məɾ't'-a-w]            tāmari                      [adjunct]  
 yesterday C-come.PF-3MS-DEF student  
 the student who came yesterday
- b. [ɪbaab yä-gäddäl-ä-w]            ɪdʒdʒ                      [argument]  
 snake C-kill.PF-3MS-DEF boy  
 the boy who killed a snake

- c. [Almaz k'ondʒo ɪndä-hon-ätʃtʃ yä-sämm-a-w] astämari [embedded clause]  
 Almaz pretty C-be.PF-3FS C-hear.PF-3MS-DEF teacher  
 the teacher who heard that Almaz is pretty

Thus far, the definite marker attaches to the right edge of a preceding AP or CP.<sup>4</sup>

Adjectives and relative clauses are both adjuncts, and multiple adjuncts can of course modify the same noun. What happens with definite marking when this is the case? If two APs modify the same noun, definite marking is obligatory on the first AP and optional on the second.

- (13) tɪllik'-u t'ɪk'ur(-u) bet  
 big-DEF black(-DEF) house  
 the big black house

If three APs modify the same noun, a similar pattern results.

- (14) k'ondʒo-w tɪllik'(-u) k'äyy(-u) kwas  
 beautiful-DEF big(-DEF) red(-DEF) ball  
 the beautiful big red ball

The first adjective must be marked for definiteness, and the additional ones may be optionally marked. If an adjective and a relative clause modify the same DP, the relative clause is obligatorily marked, and the adjective can be optionally marked.

- (15) [tɪnantɪnna yä-mät't'-a-w] t'ɪru(-w) tämari  
 yesterday C-come.PF-3MS-DEF good(-DEF) student  
 the good student who came yesterday

A pattern clearly emerges for DPs with multiple adjuncts: the leftmost adjunct is obligatorily marked and any following phrases are optionally marked.

Stacked relative clauses, though, display a different pattern: both must be obligatorily marked for definiteness.

- (16) tɪnantɪnna yä-mät't'-atʃtʃ-ɪw kemistri y-at'än-atʃtʃ-ɪw tämari  
 yesterday C-come.PF-3FS-DEF chemistry C-study.PF-3FS-DEF student  
 the student who studied chemistry who arrived yesterday

This is anomalous in the light of the previous generalization, and I will not be treating this fact in detail here. Some discussion of how it can be accounted for in the analysis developed below can be found in the conclusion.

DPs containing demonstratives display a different pattern of definite marking. In most cases, there is no definiteness marking at all, no matter where the definite marker attempts to attach.

<sup>4</sup> The morphophonology of the definite marker on relative clauses is somewhat different. The masculine singular definite marker (-u) is homophonous with the 3<sup>rd</sup> person masc., sing. object agreement marker (-u). This may have caused speakers to conflate them, since in standard Amharic, object agreement markers and definite markers are actually in complementary distribution on relative clause verbs -- i.e., a relative clause verb that has an object agreement marker cannot be marked for definiteness. Additionally, when the definite marker does appear in relative clauses, its morphophonology alters to be more similar to that of the object agreement marker. I do not treat this pseudo-syncretism here, but it has interesting cross-linguistic parallels (e.g. the homophony of French definite articles and object clitics). See discussion in Leslau 1995: 83-87 and suggestions for an analysis in Mullen 1986.

- (17) a. *ya bet*                      b. *\*ya bet-u*                      c. *\*ya-w bet*  
       that house                      that house-DEF                      that-DEF house<sup>5</sup>

However, when an adjective is present, the adjective can be optionally marked for definiteness, with no change in meaning.

- (18) *ya tǎllǎk'(-u) bet*  
       that big(-DEF) house  
       that big house

This is reminiscent of the optional definite marking on an adjective after an initial adjective or relative clause, and I argue below that both are cases of definiteness agreement.

The patterns of definite marking in DPs that contain possessors are complicated. Amharic possessors are prepositional phrases (using the preposition *yä-*, homophonous with the relative clause complementizer<sup>6</sup>), and differ significantly from the typical Semitic construct state possessor.<sup>7</sup> In most cases, there does not seem to be any definite marking of the whole DP, although the DP possessor may have its own definite marker, as in (19).

- (19) *yä-lǎdʒdʒ-u dǎbtär*  
       of-boy-DEF notebook  
       the boy's notebook (Leslau 1995: 193)

Similarly to the demonstrative case, though, the presence of an adjective triggers optional definiteness marking, as in (20).

- (20) *yä-Girma tǎllǎk'(-u) bet*  
       of-Girma big(-DEF) house  
       Girma's big house

The interpretation of (20) is controversial. In den Dikken 2007, it is claimed that without any definite marking, the whole DP must receive an indefinite interpretation (“a big house of Girma’s”). However, there appears to be some dialectal variation, since informants report that without definite marking, the DP can also receive a definite interpretation. In any case, the analysis developed below will not treat the possessor facts. The interaction between the definiteness of a possessor and the DP which contains it is semantically and syntactically complex in every language (see Barker 2000, Rawlins 2006, Chung 2007, and references therein). The already conflicting judgments in this area

<sup>5</sup> The demonstrative can combine with a definite marker when no nominal stem is present, but these forms are probably frozen, e.g. *yaw* and *yäññaw* “that one,” *yǎññaw* “this one.”

<sup>6</sup> The fact that both possessors and relative clauses are preceded by *yä-* presents an intriguing puzzle: could *yä-* be the same lexical item in both cases? Much previous research addresses this question, including Bach 1970, Fulass 1972, Henderson 2003, Ouhalla 2004 and den Dikken 2007. Each of these analyses has its own benefits and drawbacks, but the view I adopt here is relatively simple. I assume that *yä-* is a relational preposition when attached to possessors, and a complementizer when attached to relative clauses (see similar proposals in Mullen 1986). Future work will hopefully investigate how to incorporate the proposals here with a unified analysis of *yä-* (see also Section 3 for discussion of some of the *yä-*-centered analyses).

<sup>7</sup> See discussion in Kapeliuk 1989, 1994: 90-108, den Dikken 2007: 312, fn.12. Intuitively, the connection between the nouns is much looser than in the construct state. There is no phonological reduction of the possessed noun phrase, and an adjective can intervene between the possessor and possessed noun phrase.

for Amharic seem to indicate that Amharic is no exception. I leave the hammering out of possessor and definiteness interactions **for future work**.

Taking a wide view of all the data seen in this section, certain generalizations emerge. First, the definite marker cannot attach to the nominal stem when the stem is preceded by any other material. Instead, the definite marker attaches to the right edge of preceding material, regardless of whether the material is internally complex. If more than one AP or CP precedes the nominal stem, the definite marker obligatorily attaches to the leftmost adjunct, and optionally to the others (with the exception of stacked relative clauses). Demonstratives typically have no definite marking, unless there is an adjective present in which case the adjective can be optionally definite marked. These generalizations form the empirical base for the analysis to come. Before discussing the analysis in detail, though, it is necessary to discuss how previous research has dealt with the Amharic definite marker.

### 3 PREVIOUS ACCOUNTS AND POSSIBLE ANALYSES

In this section, I review previously-proposed analyses of Amharic definite marking, from Bach 1970 to den Dikken 2007. The literature review is incorporated into a broader discussion of how best to analyze the definite marker, focusing on whether the definite marker is the realization of the syntactic head D, or simply a definiteness feature.

Ever since the introduction of the DP hypothesis (Abney 1987), definite articles have been assumed to be base-generated under the syntactic head D. However, it is not obvious that this is the case for the definite marker in Amharic, considering its complicated distribution. It may be that the definite marker is the realization of a morphosyntactic feature [DEF] that is attached to the nouns, adjectives and other categories that the definite marker surfaces on, perhaps via agreement with an abstract (phonologically null) D.

Previous analyses of the definite marker can be roughly divided into two camps depending on whether the definite marker is treated as D or [DEF].<sup>8</sup> In the former kind of account, phrasal movement in the syntax accounts for the ordering of D (see e.g., Halefom 1994, Ouhalla 2004); these are discussed in Section 3.1. In the [DEF]-based accounts, two main strategies have been pursued. Either there is an AgrDefiniteness projection in the syntax (Demeke 2001, following Fassi Fehri's 1999 account of Arabic definite marking<sup>9</sup>) or there is a syntactic checking/Agree relationship between the host of the definite marker and an abstract D (den Dikken 2007). These are discussed in Section 3.2. In Section 3.3, I outline my own analysis, which addresses the problems inherent in the previous accounts by having the definite marker be in some cases the realization of D, and in other cases the realization of a definiteness feature.

The earliest attempts to explain Amharic definite marking (Bach 1970, Gragg 1972, Mullen 1986) deserve separate discussion since they were by and large rule-based. The rule developed in Mullen 1986 for the placement of the definite marker is in (21).

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<sup>8</sup> See also Kapeliuk 1994 for a thorough description of definite marking (based on textual sources) and Yimam's response to Kapeliuk 1994 (Yimam 1996).

<sup>9</sup> Several other Semitic languages also have complex patterns of definite marking (see e.g., Hebrew: Siloni 1997, Wintner 2000, Danon 2001; Arabic: Fassi Fehri 1999, Kramers 2003; Maltese: Fabri 2000). Most of the accounts are feature-based, and many have influenced the Amharic analyses I discuss below. Although Amharic definite marking is tantalizingly similar to definite marking in other Semitic languages, it is also different in some very fundamental ways (e.g. the lack of a construct state), and detailed comparative work is necessary to clarify the connections.

- (21) Definite Article Insertion  
 Adjoin the definite article on the right of each maximal projection lacking a [+definite] feature in the left branch of a complex NP, or to a non-complex NP by default.  
 (Mullen 1986: 344)

The Definite Article Insertion Rule does not quite account for the data described above. Most obviously, it does not account for the repetition data, where the definite marker is optionally repeated on non-initial adjectives. It predicts that all adjectives should be def-marked obligatorily, and to be fair, Mullen (1986:342) does in fact describe multiple adjectives as being obligatorily def-marked. However, this must be some kind of dialectal variation, since the most common pattern is to have the non-initial adjectives be optionally def-marked, as confirmed in my own fieldwork and described by Leslau (1995: 209-10), Kapeliuk (1994:35), and others. The rules proposed in Bach 1970 and Gragg 1972 do not substantially improve on the Definite Article Insertion Rule -- the rule in Bach 1970 requires that relative clauses have underlying VSO word order (see Hudson 1973 and Fulass 1972 for arguments against this assumption), and the rule in Gragg 1972 is too broad.<sup>10</sup> The earliest accounts of the definite marker are thus not useful when trying to account for the data here.

### 3.1 Head-Based Accounts

There are two main analyses that assume the definite marker is the realization of D: Halefom 1991/1994 and Ouhalla 2004. I argue that a purely head-based analysis of the definite marker is not feasible, not only because of some problems in theoretical implementation, but also because it cannot account for the appearance of multiple definite markers.<sup>11</sup>

The earliest head-based account is found in the work of Girma Halefom (1991, 1994). He assumes that the Amharic DP is head-initial, and that the definite marker realizes the D head. The morphophonological dependence of the definite marker forces syntactic material to be moved up either to adjoin to D, or to be in Spec,DP (presumably to provide it with a host). In the simple DPs (e.g. *bet-u* = house-DEF), N-to-D Raising occurs. For the adjectives and relative clauses, Halefom assumes that they are base-generated in SpecNP, and then proposes obligatory A'-movement of the AP/CP to Spec, DP (Halefom 1991:227). However, N-to-D Raising is still predicted to occur when there is an adjective or relative clause. According to the Head Movement Constraint (Travis 1984), heads can raise across specifiers, so there is no syntactic reason why N should remain in situ. If N-to-D movement occurs, though, the result is ungrammatical: either (22)a or (22)b (depending on whether the adjective moves as well).

- (22) a. \* [DP AP [D' N+D [NP t<sub>AP</sub> t<sub>N</sub>]]] = *tɪllɪk bet-u* = big house-DEF  
 b. \* [DP [D' N+D [NP AP t<sub>N</sub>]]] = *bet-u tɪllɪk* = house-DEF big

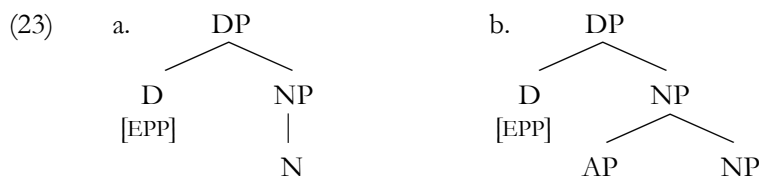
The most obvious response to this problem is that N does not move in these cases because the definite marker already has a host (the moved AP/CP), but this would require at best that syntactic operations are sensitive to morphophonological structure.

There is a way to formalize Halefom's intuition that does not make direct reference to morphophonology, though. Recent work by Roberts (2000, 2001) on Pashto uses an [EPP] feature

<sup>10</sup> Gragg's (1972) description of the distribution of the definite marker is as follows: "In general the definite article and accusative suffixes of the head noun in a NP are attached to any preceding nominal modifier (relative, adjective, genitive, demonstrative)" (159). The description is too broad in that definite markers attach optionally to non-initial modifiers and do not attach to demonstratives.

<sup>11</sup> There is one additional head-based analysis of definite marking (Kihm 2001), but I do not discuss it here because it assumes an untenable DP structure. In Kihm 2001, APs are part of the extended projection of NP (i.e., not an adjunct or a specifier; Abney 1987), which allows for a very simple analysis of definite marking on adjectives (A-to-D raising), but is not feasible in general for Amharic; see section 4.3 for further discussion.

on a functional head to fill the specifier above a second position clitic and thus provide a host for it. Halefom's analysis could be re-framed as an [EPP] feature on D triggering phrasal movement to the specifier of DP (thus avoiding all head-raising issues). However, there are still several drawbacks to the analysis. Roberts uses an [EPP] feature on T to ensure that Spec, TP is filled -- this almost always coincidentally provides a host for the clitic which is immediately below in its own projection. The Amharic data would have to rely on the [EPP] feature in a much more stipulative way. First, it would be forced to be on D, which is not as standard a host for the [EPP] feature than T. Also, this [EPP] feature would only exist to cause there to be a host for D, whereas it is independently motivated to account for word order in Pashto. Additionally, it will be difficult to constrain what XP is selected to fulfill the needs of the [EPP] feature, since there are no ancillary features (like phi-features) to pick out a particular projection to raise to Spec,DP. Consider the trees in (23).



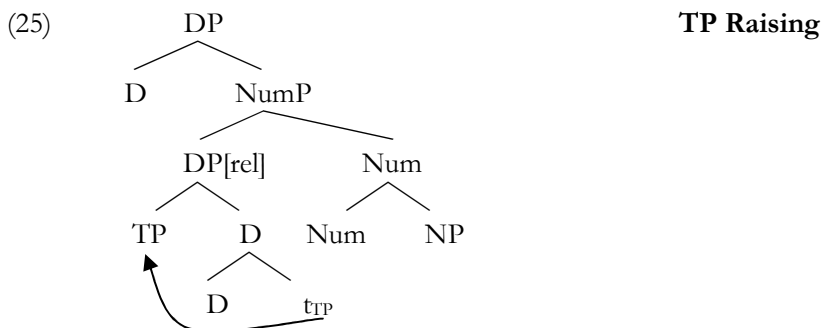
Presumably, the 'closest' XP within the c-command domain of D will be selected to fill Spec,DP. When the DP only contains D and an NP complement (as in (23)a), the NP complement must raise to Spec, DP in order to generate the attested N-D order. When the NP has an adjunct (like the AP in (23)b), it is clear from the attested Adjunct-D-N order that only the adjunct raises. However, it is unclear how to prevent the NP sister to D from raising in this case, as it did in (23)a. The NP is at best equidistant from (or at worst closer to) D with respect to AP, depending on what is assumed about adjuncts and c-command, so it is mysterious why NP raising to Spec, DP is not (also) licensed in (23)b.

This style of analysis is also problematic empirically: it does not account for the data where the definite marker repeats optionally on non-initial adjectives. There is simply nowhere for the optional definite marker to have come from. Halefom (1991:230) suggests in passing that multiple definite markers signal coordinated DPs. It is unclear though how a coordination analysis would handle the simpler, two-adjective data, especially since adjectives can be either listed without a coordinator (the big black house) or conjoined with an overt coordinator (the big and black house), and the definiteness marking patterns are different for each (see section 4.2 for the overt coordination data.) In sum, due to problems in implementation and a gap in empirical coverage, I conclude that Halefom's analysis of the definite marker is untenable.

However, there is an additional, more recent head-based analysis found in Ouhalla 2004 that deserves scrutiny. Ouhalla assumes that the definite marker is D, and that the DP is head-initial, following Kayne's (1994) antisymmetric program. Ouhalla assumes a more articulated DP structure, with a Num(ber)P projection in-between DP and NP, in line with other Semitic languages. The simplest data (*bet-u* = house-DEF) is analyzed as raising of NumP (which contains a null Num head and the NP) to Spec, DP.

(24) [DP [NumP Num [NP bet]]<sub>i</sub> -u [ t<sub>i</sub> ] ] **NumP Raising**

Relative clauses are DPs whose D head takes a TP complement (on analogy with Ouhalla's analysis of Arabic relative clauses). The relative clause DP is merged in Spec,NumP, and the TP within the relative clause raises to Spec,DP.



This results in the proper ordering of TP and D (the definite marker) within the relative clause.

The primary theoretical problem of the analysis here concerns the external D in (25). The external D must be null, but there is no discussion of how it is licensed so that a phonologically overt D is not inserted instead. Arguably, this is similar to a problem faced by head-raising analyses of relative clauses, where the raised head contains a null D (often called  $D_{REL}$ ), but there is also an overt external D, as in (26)a (see Borsley 1997 for articulation of the problem). The solution developed by Bianchi (1999, 2000) is that the null  $D_{REL}$  is licensed through incorporation with the overt, feature-bearing D. In other words, it moves and adjoins to the overt D so that they form one complex head, as in (26)b.

- (26) a. [DP the [CP [DP  $D_{REL}$  picture] that Bill liked]  
 b. [DP  $D_{REL}+$  the [CP [DP t picture] that Bill liked]

Bianchi then proposes that the two adjoined D heads undergo feature unification (also known as Fusion in Distributed Morphology) with the result that only one definite article surfaces.

A number of problems arise in attempting to apply this solution to the data at hand. In (25), the D which is null is the **external** D, whereas the D which is overt and feature-bearing is **internal** to the relative clause. The internal, overt D must remain in place so that it follows the relative clause. Hence, in order to facilitate incorporation, the external D will be forced to lower into the specifier of its complement to adjoin to the internal D, in violation of locality constraints on head movement (i.e., the Head Movement Constraint, Travis 1984).<sup>12</sup> It also remains problematic how to keep an overt D from being inserted in the external position. The external D is not a special  $D_{REL}$  that can somehow be limited to relative clauses and presumably overt D's typically are merged as complements to NumP.

Also, it is unclear how this analysis would extend to the adjective data presented above, especially when the definite marker appears optionally on multiple adjectives. In all fairness, Ouhalla 2004 contains no data about adjectives, and was not designed to account for the adjective cases. However, like Halefom's analysis above, it is unclear how the analysis would cover the many cases where the definite marker can optionally appear on an adjective, whether it is a non-initial adjective after another adjective or a relative clause, or an adjective after a demonstrative. I thus conclude that the D-based accounts are overall not feasible: they cannot account for the multiple instances of the definite marker and face several analytical challenges.

<sup>12</sup> The problem does not disappear if the head movement takes place post-syntactically. Well-known post-syntactic Lowering movements seem to conform to the Head Movement Constraint (e.g., T-to-V movement, see Embick and Noyer 2001). Also note that the null D cannot adjoin to the overt D using a post-Linearization operation, since Linearization follows Vocabulary Insertion, i.e., one of the D's is not realized as a Vocabulary Item so adjunction and subsequent feature unification must occur before then.

### 3.2 Feature-Based Accounts

In a feature-based account of the definite marker, the definite marker is the Vocabulary Item associated with the feature [DEF]. This can be made more detailed in a variety of ways and in a variety of frameworks, but the crucial point is that the definite marker is not the spell-out of the syntactic head D. In this section, I look at a couple of feature-based accounts, including the spec-head agreement account in Demeke 2001 and the Minimalist Agree account suggested in den Dikken to appear, and conclude that neither are an optimal analysis for the definite marker.

Demeke (2001: 204-206) follows Fassi Fehri's (1999) analysis of Arabic DPs in proposing that relative clauses and adjectives raise to Spec,Agr<sub>d</sub>P (Agr-definiteness-P), which is between DP and NP. In Spec,Agr<sub>d</sub>P, they can have their definiteness features checked by a spec-head relationship with the Agr<sub>d</sub> head. This relationship then is realized morphologically by the definite marker, i.e. the definite marker is an agreement feature on D (I assume - this consequence is not discussed directly). This analysis can account for the repetition data and the optionality through a few additional requirements: there can be multiple Agr<sub>d</sub>P's (and hence more than one definite marker) and movement to Agr<sub>d</sub>P can be optional under certain circumstances. While this analysis works overall, it has several unwelcome consequences. As Demeke himself acknowledges, it is unclear why the relative clause would have to move to a higher Spec,Agr<sub>d</sub>P than the adjective (which it must for DPs that contain both a relative clause and an adjective), and moreover, the movement of the relative clause to Agr<sub>d</sub>P results in a Relativized Minimality violation (under Demeke's particular syntactic assumptions). Additionally, Agr projections have been argued against extensively (see Iatridou 1990 and Chomsky 1995:349-355), as not being (at best) the most economical way to represent agreement processes. For its many imperfections in implementation, then, I conclude that an Agr<sub>d</sub>-based analysis of the definite marker is not the best way to proceed.

However, it is still worth looking at feature-based accounts that have a more recent type of agreement operations, and one such example is den Dikken 2007. den Dikken describes the definite marker as the following.

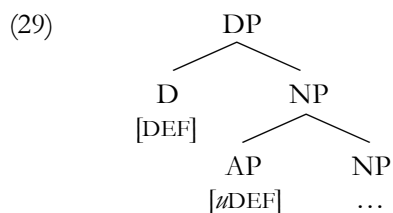
- (27) “[The definite marker] must be analyzed as an inflectional morpheme originating directly on the adjective, being merged with its host in the lexicon, and checking its features against an *abstract* D-head specified for the feature [DEF].” (den Dikken 2007:314; emphasis original)

den Dikken adopts a classical Minimalist approach (Chomsky 1995), where items are merged from the lexicon already inflected. This is incompatible with a non-lexicalist theory like Distributed Morphology, but it does work with slightly later Minimalism (Chomsky 2000, 2001 *et seq.*). Thus, the following is a sketch of an analysis of the definite marker in the spirit of den Dikken's idea, using the assumptions about features and agreement developed in later Minimalism.

I begin with the adjective data, and as a first step I assume that [DEF] can appear as an uninterpretable feature on adjectives. Since it is uninterpretable, the [ $\mu$ DEF] feature on an adjective must be valued, and since D[DEF] is (perhaps) the only element that can value this feature, D[DEF] and Adj[ $\mu$ DEF] must enter into an Agree relationship. The key properties of the Agree relationship (gleaned from Chomsky 2000, 2001, 2004) are listed in (28). I assume that Agree can relate features like [DEF] in addition to phi-features and case features.

- (28) **Agree**
- a. Agree holds between a probe which has uninterpretable features and a goal which can value the uninterpretable features.
  - b. The goal must be in the command domain of the probe.
  - c. There can be no “interveners.”
  - d. Probe and goal must be in the same spell-out domain / phase.
  - e. Both probe and goal must be “active,” i.e. have uninterpretable features.

It is clear that the Agree relationship as described in (28) will not hold between  $\text{Adj}[\neq\text{DEF}]$  and  $\text{D}[\text{DEF}]$ . Given their feature make-up, Adj should be the probe and D should be the goal, but Adj does not c-command D, and there is no independent justification for D having uninterpretable features (i.e., being active) as well.



However, the properties in (28) comprise essentially the strongest, most restricted version of Agree. It is still controversial whether one or more should be relaxed (in certain cases or in general), especially in terms of whether the properties are truly conditions on Agree or are conditions on the operation Move (which is often paired with Agree, e.g., in the canonical Minimalist treatment of agreement between a DP subject and T). Much recent research explores exactly this issue (see e.g., Richards 2004 which relaxes (28)b, Carstens 2000 which relaxes (28)e)). I therefore adjust Agree in the following way: assume that a head X with interpretable feature [F] which c-commands a head Y with uninterpretable feature [ $\neq$ F] can simply enter into an Agree relationship with Y and value Y's [ $\neq$ F]. In Amharic, then, the head  $\text{D}[\text{DEF}]$  which c-commands the head  $\text{Adj}[\neq\text{DEF}]$  can enter into an Agree relationship with Adj and value its [ $\neq\text{DEF}$ ]. The [DEF] on Adj is spelled out as the definite marker post-syntactically.  $\text{D}[\text{DEF}]$  is always spelled out as a null morpheme.

There are two main problems for this account, the first concerning optionality and the second concerning the distribution of definiteness features in the lexicon. Recall that when there are two adjectives in a DP, the first must be obligatorily marked for definiteness and the second optionally marked. Assume that Multiple Agree (Hiraiwa 2001) is allowed, and can be configured so that multiple instantiations of the definite marker can appear through multiple Agree relations between  $\text{D}[\text{DEF}]$  and any following  $\text{Adj}[\neq\text{DEF}]$ . The problem that emerges concerns the **optionality** of def-marking on the non-initial adjectives -- there is no clear-cut way to make an Agree relationship optional. If an adjective is merged from the lexicon with a uninterpretable definiteness feature, that feature must be checked in order for the derivation to converge. It is also not possible for some adjectives to have uninterpretable definiteness features and some not to -- it is difficult to see how to constrain distribution such that single adjectives were merged with the feature and second (or third) adjectives were not.

The distribution problem is also found with the simplest data (*bet-u* = house-DEF). In this case, N must have a [ $\neq\text{DEF}$ ] feature in order to be realized with the definite marker. However, the feature must be constrained such that it only appears on nouns that do not have modifiers. If it appeared on other nouns, it either (a) could not be valued since the modifier would act an intervener, and the derivation would crash, or (b) could be valued through Multiple Agree, but then definiteness-marking should be morphologically realized on the noun. These two problems render the Agree feature-based account considerably less appealing.

Both of these problems can be avoided, though, if [ $\neq\text{DEF}$ ] is optional on nouns and adjectives. A derivation with two adjectives that have [ $\neq\text{DEF}$ ] would crash, and a derivation where the second adjective did not have the feature would succeed. This renders the account more like den Dikken's (2007) original analysis where there is lexical composition of the definite marker and its host. However, there is a serious problem raised by this approach. Consider a simple definite DP: D must have definite features, but if [ $\neq\text{DEF}$ ] is an optional feature on nouns, a noun could be merged as sister to  $\text{D}[\text{DEF}]$  that did not have a definite feature itself. Since the definite marker is only the reflex of a [DEF] feature on a host, there would be no definite marker in this DP. Therefore, this account predicts that bare nouns should be able to be interpreted just like definite DPs, which is clearly false.

- (30) tāmari  
 student / students  
 #the student

Moreover, consider the relative clause data. There would have to be [*DEF*] features on verbs (or, more specifically, tense markers) in order to ensure that the definite marker is realized on the verb in a relative clause. It seems much less plausible for definite features to be relevant to verbal morphology than for the definite marker simply to be a kind of clitic that attaches to the phrase that contains the verb (as will be spelled out in more detail below). Moreover, in a relative clause that has a complex tense-aspect structure featuring auxiliaries and verbs, it would somehow have to be ensured that the [*DEF*] features would only attach to the auxiliary/verb at the end of the relative clause, which would be a difficult generalization to capture in the lexicon. For all of these reasons, then, I conclude overall that there are serious obstacles to constructing an account that relies only on the definite marker being realized as a [*DEF*] feature.

### 3.3 Combined Analysis

In this section, I outline the analysis of the Amharic definite marker which will be developed in the rest of the chapter. It is a “combined” account of definiteness marking -- the definite marker is sometimes the morphological realization of the syntactic head *D*, and sometimes the morphological realization of a [*DEF*] feature. Dividing up the data in this way renders the analysis more complex, but it has positive consequences in terms of empirical coverage and explanatory power.

I propose that the syntactic head *D* (when definite) is always spelled out as the definite marker in Amharic. Specifically, I propose that *D*[*DEF*] is a **second position (2P) clitic within DP**, using the term “2P clitic” to simply mean a morphophonologically dependent element merged at the edge of a domain which finds a host in the “second” position from that edge. Having *D* be a 2P clitic has immediate advantages. First, it explains why the leftmost element in a string of modifiers is favored in terms of definite marking - the leftmost modifier counts as first position. It also explains why a nominal stem is marked only when nothing precedes it in the DP -- that is when the nominal itself is in first position.

However, having *D* be a 2P clitic does not explain the data where non-initial adjectives can be optionally def-marked. For that, I propose there is **optional definiteness agreement on APs**, where the [*DEF*] feature is realized as the definite marker.<sup>13</sup> This analysis is supported by the fact that other DP-internal agreement processes (e.g. adjective-N number agreement) are optional as well.

In the remainder of the chapter, the 2P clitic analysis is presented. The definiteness agreement analysis is presented in Chapter 3.

## 4 THE ANALYSIS OF DEFINITE MARKING : SECOND POSITION

In this section, I discuss how the definite marker reaches second position, but first, a small digression is necessary on the headedness of the DP. Amharic is primarily a head-final language, but the DP has most often been treated as head-initial in the literature. This is either because it has been assumed that all functional projections are head-initial in Amharic (Halefom 1994), or that head-final projections are not licit in general (Demeke 2001, Ouhalla 2004, den Dikken 2007). Empirical evidence concerning the headedness of the DP projection is unfortunately difficult to find. The distribution of the definite marker is of course rather complex, and other uncontroversially *D* elements are not forthcoming (demonstratives are not necessarily *D* heads; Giusti 1997). One

<sup>13</sup> A terminological note: DP-internal agreement is sometimes called “concord,” but since I make no distinction between DP-internal and other types of agreement, they are all referred to as agreement.

possible piece of evidence comes from the *we students* construction investigated by Postal (1969) for English. In Amharic, the pronoun precedes the nominal, just as in English.

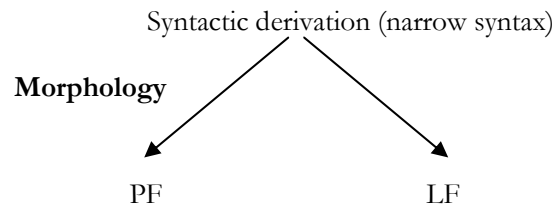
- (31) ፈሽላ ጥላም-ወተፊ  
 we student-PL  
 we students (Yimam 1988: 600)

If pronouns are D heads, then the DP is clearly head-initial. However, the pronoun also precedes the nominal in other head-final languages, e.g. Turkish (J. Hankamer, p.c.) and Japanese (T. Ying, p.c.), so either the DP projection is uniformly head-initial or something more complex is going on with this particular construction (e.g. it may be appositional, despite Postal's (1969) arguments to the contrary). In the analysis below, I begin by assuming the DP is head-initial, in line with previous work, and find some support for this assumption along the way.

#### 4.1 Second Position

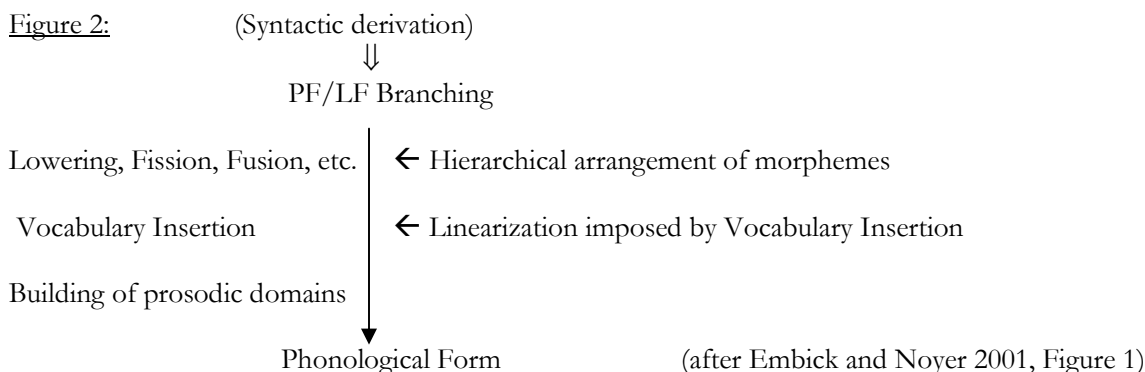
It is an understatement that the literature on second position clitics is vast. There has been a sustained interest in second position clitics from a generative perspective since the early 1980s, with the broadest perspectives found in work by Klavans (1980 et seq.), Miller (1992), Halpern (1995), Anderson (2005), and a collection of papers edited by Halpern and Zwicky (1996). It is crucial to determine for the Amharic definite marker **where** 2P happens in the grammar and how it works. As a start, then, it will be useful to clarify my assumptions about the grammar. I assume a conventional Y-model: after the syntactic derivation is complete, it is sent to Phonological Form and Logical Form. Following Embick and Noyer (2001), 'Morphology' is a subcomponent of the grammar along the PF branch where specific morphological operations occur.<sup>14</sup> These assumptions are represented in Figure 1.

Figure 1:



Embick and Noyer (2001) propose a very articulated order of operations on the PF branch, reproduced in Figure 2.

<sup>14</sup> In Halle and Marantz 1993 (the fundamental paper on Distributed Morphology), morphological operations occur at a separate level of the grammar called Morphological Structure that serves as “the interface between syntax and phonology” (Halle and Marantz 1993:114). Embick and Noyer (2001) appear to retreat from this position, claiming that morphological operations occur along the PF branch (and are collectively referred to as ‘Morphology’), but do not constitute a separate level of the grammar. I do not believe the differences here affect my analysis. For discussion on levels in linguistics, see Ladusaw 1988.



Directly after the PF/LF Branching, hierarchical structure persists and morphological operations like Lowering, Fission, Fusion and others take place. Next, the vocabulary items are inserted (the terminal nodes are provided with phonological content), and the structure is linearized. Various post-linearization operations (e.g. Local Dislocation; Embick and Noyer 2001, Embick 2007) also take place. Finally, prosodic domains are built, and the PF derivation finishes with a complete phonological and linear representation. There are many potential stages of the derivation at which a second position effect could come into play: the narrow syntax, pre-linearization, post-linearization, and in the phonology. I consider each of these possibilities.

To start at the top of the grammar, many (if not most) second position clitic accounts have at least partially relied on operations at the narrow syntax level to explain the placement of the clitics (Black 1992, Tomić 1996, Progovac 1996, Pancheva 2005 et al.). A typical syntactic account states that the second position clitic is a head X (or moves to a head X), and that the host of the clitic raises to the specifier position of XP. The head-based analyses in Section 3.1 (Halefom 1991, 1994, Ouhalla 2004) are both this style of analysis, and since both of these accounts were incompatible with the Amharic data, I do not pursue this approach further. Moreover, I consider there to be a fundamental problem with a purely syntactic approach to morphophonologically dependent items. In an ideal theory of grammar, syntactic operations occur for syntactic reasons (e.g. to check uninterpretable features) -- not to provide support to items that are morphophonologically weak, but usually syntactically independent (i.e. heads). There are exceptions to this, the most prominent one being head-raising, but it seems desirable in the main to keep the syntax as free from being governed by syntax-external considerations as possible (see also discussion on this point in Embick and Noyer 2001: 556-557). An ideal account of second position clitics, then, will be confined to the morphology or phonology, on the understanding that second position cliticization occurs to provide a morphophonological host for a clitic that cannot find a host in its base position.<sup>15</sup>

I begin by looking at a phonological account of the definite marker in Amharic (Section 4.2) and a morphological account based on Lowering (Section 4.3), both of which are not feasible analyses. In Section 4.4, I develop a phase-based analysis of the definite marker where it is placed in second position by Local Dislocation. This kind of account not only predicts the data best, but also provides evidence for the cyclicity of PF operations and the role of phase impenetrability at PF.

<sup>15</sup> Note that the analysis in Roberts 2000, 2001 is not a syntactic account of cliticization. [EPP] features on T usually happen to provide the clitic with a host, but the clitic attaches to whatever is in first position regardless of whether it has moved there by virtue of the [EPP] (e.g. it can attach to a complementizer, Roberts 2000:89). Moreover, if there is no such host at PF, the clitic undergoes a morphological operation to fix the situation -- there are no syntactic operations that occur solely to provide it with a host.

## 4.2 2P in the Phonology

Purely prosodic or phonological analyses are not a common kind of account for second position clitics, but they have been advanced in Radanović-Kocić 1996, Hock 1996, Taylor 1996, and Chung 2003, among others. A prosodic account of the Amharic definite marker would have to state that the definite marker subcategorizes to attach to the right of some prosodic constituent. Presumably, this prosodic constituent would be leftmost within the DP (which would itself correspond to a particular prosodic domain). It may seem impossible to have the host of the definite marker be one consistent prosodic size -- it can range from a single prosodic word (e.g. an adjective) to a lengthy relative clause. However, let us assume that this is possible for the sake of argument and investigate what kind of prosodic constituent it would have to be.

I assume the standard prosodic constituents: syllable, foot, prosodic word, phonological phrase, intonational phrase and utterance (as listed in, e.g., Selkirk 1986). It is clear that the prosodic constituent in question for Amharic must be larger than a syllable, a foot, or a prosodic word in order to accommodate relative clauses. However, it must be smaller than an intonational phrase in order to accommodate single-adjective APs and nominal stems. The one constituent inbetween is the phonological phrase (p-phrase), so this is what the definite marker must subcategorize for. At prosodic phrasing, then, either the definite marker inverts with the leftmost phonological phrase (Prosodic Inversion; Halpern 1995), or it is inserted as a vocabulary item directly where its prosodic subcategorization can be fulfilled (suspending the Distributed Morphology assumption that vocabulary insertion precedes the building of prosodic domains; see Chung 2003).

This account requires that the mapping between morphosyntactic and prosodic structure be very carefully delineated, since it needs to be the case that both multiple-prosodic-word relative clauses and single adjectives are p-phrases. Moreover, there must be a way to ensure that the definite marker attaches to the leftmost p-phrase (perhaps built into the subcategorization, as in Chung 2003). Even ignoring these analytical challenges, though, there are empirical reasons to consider a prosodic account less than ideal -- it cannot account for coordinated structures.

In Section 2, the patterns of definite marking were investigated for multiple adjuncts. However, data was not presented for DPs whose adjuncts are conjoined with an overt conjunction. When that is the case, a very different pattern emerges. Instead of definite marking being obligatory on the first element and optional on the second element, definite marking is required on both conjuncts (see Miller 1992b for discussion of comparable phenomena in other languages).

### (32) Coordinated APs

t'ik'ur-u {inna / wäyɨss} sämayawi-w kwas  
 black-DEF and/or blue-DEF ball  
 the black and/or blue ball

### (33) Coordinated CPs

bira yä-t'ätt'a-w {inna / wäyɨss} wät'-u yä-bälla-w tämari  
 beer C-drank-DEF and/or stew-DEF C-ate-DEF student  
 the student who drank beer and/or ate the stew

### (34) Coordinated NPs

däbtär-u {inna / wäyɨss} iskrɨbto-w  
 notebook-DEF and/or pen-DEF  
 the notebook and/or pen

Under a prosodic account, it is predicted that the definite marker would attach either to the right edge of the whole conjoined structure (if it is one phonological phrase), or to the first conjunct (if the two conjuncts are each phonological phrases). Compare the case of Chamorro weak pronouns,

which are prosodic 2P clitics that attach to the first p-phrase in an intonational phrase. In conjoined maximal projections (conjoined DPs in (35)), the weak pronoun attaches only to the first conjunct (Chung 2003: 594-596), thus choosing the first option of the two described above.

- (35) [Infitmera-n Rosa]<sub>DP</sub> **yu'** yan [doktu-n Julia]<sub>DP</sub>  
 nurse-L Rosa I and doctor-L Julia  
 I am Rosa's nurse and Julia's doctor. (Chung 2003: 595)

A prosodic account of the definite marker does not seem promising, given its failure to account for the coordination data. I proceed to consider morphological accounts.

### 4.3 2P in the Morphology: Lowering

Morphological Merger (where a hierarchical or precedence relationship between morphemes is “traded” for a relationship of adjunction/affixation) is one of the major types of morphological operations, and it has often been used to explain second position effects (Marantz 1988, 1989, Embick and Noyer 2001, Embick 2007, Embick and Noyer 2007). Embick and Noyer (2001, 2007) argue for at least two varieties of Morphological Merger: Local Dislocation and Lowering. As shown in Figure 2, Lowering occurs immediately after the syntactic structure is sent to PF and relies on hierarchical structure. Local Dislocation occurs after Linearization and Vocabulary Insertion and relies on linear precedence. In this section, I discuss a Lowering analysis of the definite marker along the lines of Embick and Noyer’s (2001) analysis of the Bulgarian definite marker, and argue that it requires some unmotivated assumptions about the structure of DP.

The operation Lowering lowers a head to the head of its complement.

- (36) 
$$\begin{array}{c} [XP X [YP Y ZP]] \\ \quad \quad \quad \uparrow \\ \quad \quad \quad \text{Lowering} \end{array}$$

Since Lowering “skips” intervening adjuncts and specifier, it initially seems like an implausible analysis for Amharic definite marking. APs are adjuncts, and the definite marker assuredly does not skip them. However, the assumption that APs are adjuncts within DP can be questioned, and this is the approach that Embick and Noyer (2001) take in their analysis of the Bulgarian definite marker.

The definite marker in Bulgarian has a similar distribution to the definite marker in Amharic. It attaches to the right of the noun if the noun is alone in the DP, or to the right edge of an AP.

- (37) a. kniga-ta                      book-DEF                      the book  
 b. interesna-ta kniga       interesting-DEF book       the interesting book

In their analysis of the Bulgarian definite marker, Embick and Noyer (2001:568) crucially assume that AP is a sister to D, and that A takes an NP complement, as in **Error! Reference source not found.**

- (38) 
$$\begin{array}{c} DP \\ \swarrow \quad \searrow \\ D \quad \quad AP \\ \quad \quad \swarrow \quad \searrow \\ \quad \quad A \quad \quad NP \\ \quad \quad \quad \quad | \\ \quad \quad \quad \quad N \end{array}$$

This Abney-style (1987) DP allows for an elegant Lowering analysis of the definite marker. D simply lowers to A (or to N when no AP projection intervenes).

However, there are some problems with (38), as pointed out most recently by Hankamer and Mikkelsen (2005) and Dost and Gribanova (2006). The adjective does not meet the criteria set out in Zwicky 1985 for a head of the nominal phrase: it is not obligatory, it is not unique, and it does not affect the features on the NP it modifies. Moreover, there is an empirical reason not to accept the structure in (38). It is possible for an AP to be fronted to a DP-initial position for focus in Amharic, as described in Demeke 2001 (211ff.), and den Dikken 2007 (fn. 14). In (39), the AP *bät'am tällik'-u* 'very big' has been fronted past a possessor (APs typically follow possessors).

- (39) *bät'am tällik'-u* *yä-Girma* *bet*  
 very big-DEF of-Girma house  
 Girma's **very big** house

However, according to the structure in (38), AP without NP is not a constituent and should not be able to move. In sum, a Lowering account requires AP to be the complement of D, and there is evidence that this cannot be the case.

#### 4.4 2P in the Morphology: Local Dislocation

I continue to consider an account that uses Local Dislocation instead of Lowering. Local Dislocation trades a relationship of immediate precedence for affixation under adjacency, and a schematic example is in (40). The star \* represents an immediate precedence relation.

- (40)  $X * Y \rightarrow Y-X$  [or]  $X-Y$

Before Local Dislocation, X immediately preceded Y and they were distinct morphological heads. After Local Dislocation, X has (right- or left-)adjoined to Y and they comprise one complex head. The immediate precedence requirement serves as a simple and strict locality condition, in that X cannot dislocate to Y if there is a Z such that X precedes Z and Z precedes Y (i.e.,  $X * Z * Y$ ).

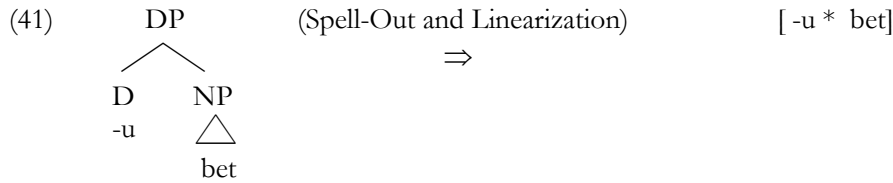
Local Dislocation at first seems too local to be the right approach to the Amharic definite marker --- the definite marker does not necessarily dislocate with the morphosyntactic head that it immediately precedes. However, if phase impenetrability is assumed (in a sense to be made precise below), then using Local Dislocation to place the definite marker in second position is very successful in accounting for the data and has several interesting theoretical consequences. The rest of this section is devoted to exploring how phase impenetrability and Local Dislocation interact.

As a start, assume that spell-out occurs cyclically, phase by phase (or more technically, spell-out domain by spell-out domain). I assume that DP, CP and AP are phases, and that the spell-out domain of a phase XP includes the phase head X and the complement YP to the phase head.<sup>16,17</sup>

<sup>16</sup> CP has been considered a phase since Chomsky 2000, and DP has also been argued to be a phase (Svenonius 2004). However, to the best of my knowledge, there has been little work on whether AP is a phase. Chomsky (1986:80) suggested in earlier work that AP is a barrier, which might indicate that it is a phase (see Boeckx and Grohmann 2007 on the similarity between phases and barriers). Additionally, if a phase corresponds to the notion of the Extended Projection of a lexical head (Grimshaw 2005), which seems intuitively attractive, then AP/DegP (see below) should also be a phase since it is the extended projection of the lexical head A.

<sup>17</sup> Assuming that the spell-out domain of a phase includes the phase head prohibits interphase head movement in the syntax. If the phase head is spelled out, it cannot move outside of its phase, e.g. V cannot raise to T (assuming *n*P is a phase). Chomsky (2000) has suggested that all head movement is post-syntactic, but regardless, I am willing to assume a weaker version of my assumption, namely, that the spell-out domain of a **DP** phase must include the phase head D. To the best of my knowledge, there are very no instances of D undergoing head-raising to a position outside the DP.

With these assumptions, the simplest data concerning the definite marker can be straightforwardly accounted for using Local Dislocation, even without appealing to phase impenetrability. When a simple DP which contains only the definite marker and a nominal head is spelled out and linearized, the definite marker is at the left edge of the string.



In the linearized string to the right of the arrow in (41), the definite marker has no host. Following recent work on definite markers in other languages, I assume that the dependence of the definite marker is encoded in certain PF requirements on morphemes, as in (42).

- (42) a.  $-u \sim -wa$  must have a host.  
 b.  $-u \sim -wa$  attaches to the right edge of its host.  
 (cf. Hankamer & Mikkelsen 2005: (38), Embick & Noyer 2001:581)

These requirements motivate the application of operations like Local Dislocation. In the above example, in order for the definite marker to meet its requirements, it must dislocate to right-adjoin to the nominal *bet* ‘‘house.’’

- (43)  $[-u * \text{bet}] \rightarrow [\text{bet-u}]$

This results in the attested data where the definite marker is attached to the nominal.

It may seem simpler to assume that DPs are head-final, so that the definite marker could undergo string-vacuous Local Dislocation and right-adjoin to the nominal. However, if this were true, it would be predicted that the definite marker would always attach to the nominal head since it could always undergo string-vacuous Local Dislocation. It would also make the obligatory marking of the leftmost (as opposed to the rightmost) adjective in a string of adjectives much harder to explain. Thus, if the definite marker is placed by an operation after Linearization, it must be the case that the Amharic DP is head-initial.

A simple application of Local Dislocation cannot be the correct analysis for all the data since its locality condition is too strict. Here is where phase impenetrability becomes crucial, and the following is the version of Chomsky’s (2000, 2001, 2004) Phase Impenetrability Condition (PIC) that will be used here.

(44) **Phase Impenetrability Condition**

In a phase  $\alpha$ , the spell-out domain of  $\alpha$  is not accessible to operations outside  $\alpha$  -- only the edge of  $\alpha$  is accessible to such operations.

(Chomsky 2000:108, Chomsky 2001:13; modified to reflect my assumption that the head is part of the spell-out domain)

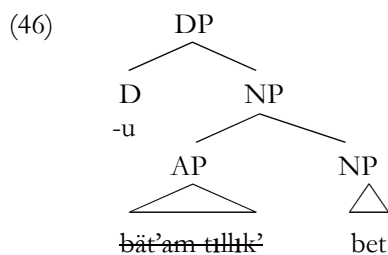
I propose that the Phase Impenetrability Condition also holds at PF. Consider a spell-out domain  $\alpha$  which contains a distinct spell-out domain  $\beta$ .  $\beta$  is impenetrable in the sense that morphological operations that occur during the Spell-Out of  $\alpha$  (Lowering, Local Dislocation, Fission, Fusion, etc.) cannot target any morphemes internal to  $\beta$ , and cannot move any morphemes into  $\beta$ . In other words, the morphological operations cannot alter  $\beta$  either by removing or adding morphemes to it,

or by changing the relationships between the morphemes internal to it. Essentially,  $\beta$  is inaccessible to morphological operations that happen during the Spell-Out of  $\alpha$ .

However, there is a crucial exception to this. The edge of  $\beta$  is still available, where the edge material is usually defined as any specifier of  $\beta$ . However, as discussed further in Section 4.5, none of the relevant phases for the Amharic data have filled specifiers. Instead, I propose that the edge of  $\beta$  can be interpreted more literally, in the following sense. The PIC has the effect that  $\beta$  is an opaque morphological object – there is no differentiation between the heads internal to it at this point and it has no internal structure. This is because all the PF relations between the heads internal to  $\beta$  have been set previously during its own spell-out, and they cannot be changed during this later spell-out. However, the relationships between the edges of  $\beta$  and the material surrounding it has not yet been set. In other words, all the  $\beta$ -internal material has been spelled out, but the linearization of  $\beta$  as a whole with respect to the material in  $\alpha$  is still open. Morphological operations at  $\alpha$  can thus move a morpheme to the edge of  $\beta$  without any disruption of previously-set relationships. In effect, then,  $\beta$  is equivalent to a simple head at PF: internally opaque, but capable of having other heads adjoin to either of its edges.

These assumptions about the nature of previously spelled-out phases at PF can account for the Amharic data. Consider the DP in (45) where (roughly) DP is the spell-out domain  $\alpha$  that contains another spell-out domain  $\beta$  (roughly AP).

- (45) *bät'am tällik'-u bet*  
 very big-DEF house  
 the very big house



The linearized string in (47) is a representation of (45) after the DP spell-out domain has been linearized and vocabulary has been inserted. Spelled-out material is struck-through.<sup>18</sup>

- (47) [-u \* ~~[bät'am tällik']~~ \* bet]

Since the Phase Impenetrability Condition holds at PF, PF operations like Local Dislocation cannot access any of the heads in the previously spelled-out domain AP. However, the domain AP itself is a morphological object, internally opaque but with edges available for adjunction, and still in the process of being ordered with respect to the other objects surrounding it. I propose, then, that the domain can participate in Local Dislocation just like a simple head. In (47), since the AP is the closest “head” to the definite marker in terms of precedence, the definite marker simply dislocates with it and adjoins to its right edge.

<sup>18</sup> I assume that *bät'am* “very” is in the spell-out domain of the AP, or more specifically, the DegP. Abney (1987) and others argue for a DegP shell over AP where the Deg head houses items like *how, so, more, less*, etc. I have not been using DegP only for purposes of clarity, and I assume that it is DegP that is the actual phase, and not AP (see fn. 10 and Section 4.5.1). Abney (1987) and Corver (1997) cite examples like *How very charming!* as evidence that *very* is below Deg, which would indeed cause *very* to be in the spell-out domain of DegP.

(48) [ [bāt'am \*tllik<sup>2</sup>]-u \*bet]

The definite marker thus receives a host to its right, meeting its PF requirements. The fact that it seems to “skip” so much material is due to the fact that the element that it immediately precedes is a previously spelled-out domain.

The rest of the data seen so far can also be predicted. The relative clause data is accounted for exactly the same way as the adjective data above, with the definite marker dislocating with the spell-out domain of the relative clause CP. The multiple adjective patterns of definite marking are also accounted for. The individual APs have been spelled out by the time the spell-out domain of the DP phase is sent to PF, and they are each separate phases, i.e. there is a phase boundary between them. The initial Linearization of (49) thus as in (50), with the phase/domain boundaries indicated by brackets.

(49) tllik<sup>2</sup>-u t'ik<sup>2</sup>ur(-u) bet  
big-DEF black(-DEF) house  
the big black house

(50) [-u \* [tllik<sup>2</sup>] \* [t'ik<sup>2</sup>ur] \* bet]

The leftmost adjective is the element that the definite marker immediately precedes, so that is what it dislocates to. This same process can explain the obligatory definite marking in DPs that contain both a relative clause and an adjective – the relative clause and the adjective each constitute separate domains and the definite marker attaches to the leftmost domain (the relative clause).

Local Dislocation and phase impenetrability at PF can account for all the obligatory definite marking seen so far. Local Dislocation applies cyclically by spell-out domain, and a previously spelled-out domain is impenetrable, i.e. a closed cycle.<sup>19</sup> The idea that PF operations can apply cyclically is originally suggested in Embick 2007, and in the next section, I discuss his conclusions as well as a few additional particulars about the analysis here.

#### 4.5 2P in the Morphology: Further Details

A few loose ends were left in the previous discussion of definite marking, and they are tied up below. In Section 4.5.1, I discuss a particular prediction of the analysis concerning specifiers, and conclude that this prediction cannot be tested in Amharic. In section 4.5.2, I discuss the

<sup>19</sup> There is one final consequence of using Local Dislocation that deserves comment. Since Local Dislocation follows Vocabulary Insertion, the definite marker has already been inserted before it attaches to its host. Therefore, it is predicted that the definite marker would not have allomorphs that depend on the nature of its host, since it is not close enough to the host at Vocabulary Insertion for the host to influence allomorph selection. This prediction is borne out for the Amharic data, but in other languages, there is evidence for clitic allomorphy depending on the host (or more often, other properties of a clitic cluster), e.g. in Serbo-Croatian (Anderson 2005: 128-132). For example, in Serbo-Croatian, the feminine singular accusative clitic *je* must be realized as *-ju* when it is followed by another clitic realized as *je*.

- (i) a. Oni su je/\*ju zaboravili      b. Oni ju/\*je je zaboravio  
they AUX her forgot            they her AUX forgotten  
They forgot her.                    He forgot her. (Anderson 2005:129)

This can be regarded, though, as evidence that this clitics do not undergo Local Dislocation. This is compatible with Distributed Morphology's general position that clitics are not a homogeneous group, but instead are derived through a variety of mechanisms.

coordination data that was introduced in Section 4.2, which initially seems problematic but can be plausibly accounted for. In 4.5.2 and 4.5.3, I also discuss how the conclusions in Embick 2007, which partially involve coordination, are related to the present analysis.

#### 4.5.1 Predictions about Specifiers

There is a crucial difference between “phase” and “spell-out domain.” In this analysis, a spell-out domain includes only the head X of the phase and the complement to X, but the phase also contains the specifier position of XP. In the context of the above analysis, then, it is predicted that if the specifier position was filled for any of the phases following the definite marker, the definite marker should attach to the leftmost head in the specifier (if the specifier is not a phase) or to the right edge of the specifier (if it is a phase). This is because the specifier will be closer to the definite marker in terms of precedence than any other morpheme (assuming leftward specifiers). Unfortunately, this prediction cannot be tested. There is a robust empirical generalization that neither CPs nor APs have filled specifiers in Amharic, and it is worthwhile to briefly look at some data that supports this generalization.

Consider first the case of relative clause CPs. The specifier position of a relative clause CP can traditionally be filled with either a *wh*-word or a null Operator, as shown for the English examples below.

- (51) a. the snake [<sub>CP</sub> **which**<sub>i</sub> [<sub>IP</sub> the boy killed *t*<sub>i</sub>]]  
 b. the snake [<sub>CP</sub> **Op**<sub>i</sub> that [<sub>IP</sub> the boy killed *t*<sub>i</sub>]]

As mentioned earlier, Amharic does not have *wh*-words within relative clauses, but presumably there are null operators. A null operator, however, has no phonological realization, so it cannot serve as a host for the definite marker. It may have even been eliminated entirely from the derivation by the time it is linearized, depending on how phonologically empty elements are treated at PF.

Spec,CP is often the target of movement that is driven by information structure, e.g. topicalization, focus movement, etc. In Amharic, a definite direct object can be optionally topicalized to the left edge of a clause, resulting in OSV order (instead of canonical SOV). It is reasonable to assume that the direct object has moved to Spec,CP, so this could be a test case for the predictions of the analysis above. However, topicalization is not possible in relative clauses.<sup>20</sup>

- (52) \*kʷusl-u-n            and doktär yä-fāwwäs-ä-bbät mädhanit  
 wound-DEF-ACC    a    doctor    heal.PF-3MS-with.it    medicine  
 the medicine with which a doctor healed the wound

Thus, Spec,CP (for relative clauses) never seems to be filled with phonologically overt material.

APs are a slightly more complicated case. Much research on adjective-internal syntax (Abney 1987, 1997, Kennedy 1997) has adopted a structure where adjectives have an Extended Projection (Grimshaw 2005), like other lexical heads. The extended projection is headed by a Degree morpheme, which projects a DegP, as in (53).

- (53) [<sub>DegP</sub> Deg [<sub>AP</sub> A ]]

<sup>20</sup> This restriction may relate to the proposal made in Kuno 1976 and Bresnan and Mchombo 1987 that the relativized constituent is always (already) the topic of the relative clause. It may also relate to the fact that in the typologically-similar language Turkish, DPs can only topicalize to a position high in the root clause (never within an embedded clause, Jorge Hankamer, p.c.).

Following Abney (1987:305), Kennedy (1997:124) argues that measure phrases (*six feet tall*, *fifty yards wide*) are generated in the specifier of DegP, with the following adjective as the head of AP.<sup>21</sup> However, attributive measure phrases in Amharic are ungrammatical with a following adjective, i.e. it is only possible to say *a six-foot fence* and not *a six-foot-tall fence*.

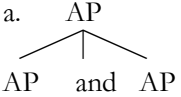
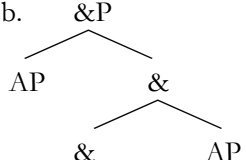
- (54) siddɪst metɪr (\*rädʒdʒim) at'ir  
 six meter (tall) fence  
 a six-meter fence

I conclude that the specifier positions of relative CPs and DegPs in Amharic are unfilled, so it cannot be determined whether or not the definite marker would attach to these elements. It may be the case that other languages with prosodically dependent definite markers that are amenable to this style of analysis (perhaps Bulgarian) can serve as a testing ground for this prediction.

#### 4.5.2 Coordination

I turn now to the coordination data that was presented briefly in the discussion of a phonological account of the definite marker earlier in section 4.2 (see (32) - (34)). The key generalization is that definite marking is obligatory on both conjuncts.

The impact of the coordination data on the Local Dislocation analysis depends on how coordination is analyzed syntactically. If coordination structures are either tripartite or asymmetric (as in (55)a and (55)b respectively), incorrect predictions are made depending on the phase-hood of conjoined structure and &P. If the topmost node is a phase in either structure, then it is predicted that the definite marker would attach to the right edge of the rightmost conjunct. If the two APs in the tripartite structure are separate phases, then they should be treated like other AP-sequences, with obligatory marking on the first AP. If &P is not a phase, then the definite marker should simply attach to the closest accessible head in Spec,&P.

- (55) a.  **Tripartite**      b.  **Asymmetric**

None of these predictions are true, and the overall problem seems to be that the definite marker ends up on not just one, but both conjuncts. However, there is an alternative analysis of coordination proposed by Goodall (1987) which can properly capture the data.

Goodall (1987) argues that it is possible to have pairs of nodes in a tree for which neither the dominance relation nor the precedence relation holds. These nodes may have dominance and/or precedence relations with other nodes, but they do not with each other. This results in, as Goodall phrases it, the nodes existing in “parallel planes” within the same tree, as if there were two trees with one pasted on top of the other. Goodall claims that coordinate structures instantiate this possibility. In a given coordinate structure, no pair of nodes that consist of one node from one conjunct and the other from the other conjunct will be in a dominance or precedence relation with the other.

Following Lasnik and Kupin (1977), Goodall assumes that “phrase markers” (a collection of statements about the phrase structure of a sentence) are used to represent syntactic structure (formally, phrase markers are slightly more restrictive than trees, although most phrase markers can be converted into trees). In his analysis of coordination, Goodall proposes that the phrase marker for the sentence in (56)a contains two component sentences, which are in (56)b.

<sup>21</sup> Although see Rizzi 1990:35-37 for an analysis of Italian measure phrases as (rightwards) adjuncts to AP.

- (56) a. John sleeps and eats doughnuts.  
 b. John sleeps. John eats doughnuts.

The tree is essentially derived by taking the union of all the nodes in (56)b, crucially assuming that non-terminal nodes which dominate the same terminals are not distinct. Thus, there are two DP nodes (one for *doughnuts*, one for *John*), and one TP node for the whole sentence, but two distinct verbal projections -- the nodes of which neither dominate nor precede the nodes of the other. This approach obviously raises the question of how the two distinct verbal projections (and other coordinate structures) are pronounced. Goodall (1987:23) proposes a linearization principle that has the effect of imposing a precedence relation on items that are unordered. In other words, the coordinate structure is “pulled apart” at linearization so that the two conjuncts can be pronounced serially.

Goodall’s account at first seems to make the wrong predictions for the Amharic data. If the coordinate structure is “pulled apart” at linearization, then it will seem just like any other linearized string of adjectives. However, it is probably a simplification to view Linearization as a unitary operation that simply converts a tree (or phrase marker) to a linearized string. Bobaljik (2002) and Embick (2007) have both argued that Linearization is comprised of several sub-operations, and I adopt Embick’s proposals, which separate Linearization into three stages. The first stage (“Adjacency”) is essentially calculated from hierarchical relations, e.g. from the tree [DP D NP] the relation [D \* NP] is calculated. The second stage calculates the precedence relations of all the terminal elements of the phrases, which Embick terms “Concatenation.” The final step is “Chaining” where all the information from the previous processes is represented in a linear sequence.

Following Embick (2007), I assume that Local Dislocation occurs beforehand at Concatenation. My proposal concerning coordination is that conjuncts are not linearized until the very latest stage, i.e. Chaining. Note that during Concatenation and other earlier stages of linearization, various morphological operations can occur and alter the linear relations. It is not until Chaining, then, that the linear order is actually set, and the “pulling apart” of the conjuncts is simply delayed until the very last step before pronunciation. Since the “pulling apart” does not happen until after Concatenation, conjuncts are not ordered with respect to each other when Dislocation happens, as shown in (57).

- (57) [ -u \*  $\left\{ \begin{array}{l} tɨllɨk' \\ t'ɨk'ur \end{array} \right\} * bet]$

The definite marker precedes both the adjectives, and the noun *bet* “house” follows them, but the adjectives *tɨllɨk'* “big” and *t'ɨk'ur* “black” are unordered with respect to each other. This assumption allows for several different possibilities in accounting for the “double” definite marking. It could be argued that Local Dislocation is subject to a version of the Coordinate Structure Constraint that would apply to moving material *into* conjuncts (as opposed to, out of conjuncts).<sup>22</sup> Alternatively, it could be that since both adjectives are equidistant in terms of precedence from the definite marker, both must be marked for definiteness. Regardless, it is now possible to generate the double definiteness marking seen on conjuncts, while maintaining the analysis developed above.<sup>23</sup>

<sup>22</sup> See also Hankamer 2008 where it is argued that dissociated morphemes are subject to a similar constraint on insertion, i.e. that dissociated morphemes must be inserted in all conjuncts of a coordinated structure.

<sup>23</sup> One might suppose that the conjoined adjectives would be already linearized with respect to each other since they have already been spelled out, i.e. taken all the way through PF to chaining. Here, the difference between phase and spell-out domain is crucial. The spell-out domain of the AP phase includes the head A and its complement (if there is any), but not the AP node itself. Recall that under Goodall’s analysis, there are actually two distinct AP nodes since they dominate different terminal items. The coordinate structure cannot be fully pulled apart then, until both top AP nodes are also linearized, i.e. as part of the next largest spell-out domain,

In (57), I am abstracting away from the conjunction itself. Goodall (1987:31-3) proposes that the conjunction is unordered along with the conjuncts, and that it is placed between them via the linearization principle. This may predict that the conjunction would be a host for the definite marker. However, there is another alternative to the position of the conjunction that keeps it from being definite-marked and connects to previous work on coordination and Local Dislocation.

The Latin conjunction *-que* is often cited as an example of Local Dislocation (Embick and Noyer 2001, Embick 2007; see also Marantz 1988). It undergoes Local Dislocation to attach to the first head of the second conjunct.

(58) diu noctu-**que** ‘by day and by night’ (Embick 2007: (6))

(59) cum hac et praetoria cohorte cetratorum  
with this.ABL and official.ABL escort.ABL caetratus.GEN

[barbaris-**que** equitibus paucis]  
barbarian.ABL.PL cavalry.ABL.PL few.ABL.PL

...with these and his official retinue of lightly-armed troops and a few barbarian cavalry-men  
(C. B.C. II.75; Embick 2007: (7a))

The Local Dislocation of *-que* does not seem to be sensitive to phase impenetrability. If each of the conjuncts is a phase, their domains will have been already spelled out before *-que* needs to move (assuming syntactic structure is built from the bottom up and that a phase is spelled out after its phase head is merged). Local Dislocation should then not be able to move *-que* within the conjunct. To address this problem, I suggest that *-que* is a part of the spell-out domain of the second conjunct. This is compatible with theories about the syntax of coordination (especially a theory that endorses &P), and is supported by the following observations. In discussions of *-que*, it is assumed that it is positioned between the two conjuncts and that all material has already been linearized. However, if *-que* requires a host to its left, then why does it not attach to the final head in the first conjunct? A string-vacuous application of Local Dislocation would seem more economical. If, though, *-que* is in the spell-out domain of the second conjunct, it is correctly predicted to attach within the second conjunct and could not attach to the first conjunct at all.<sup>24</sup>

To return to the Amharic data, if the conjunction is part of the second conjunct, it is not predicted to host the definite marker (since it will not be at the right edge of that conjunct). Overall, then, it is possible to account for the Amharic coordination data with a Local Dislocation analysis using Goodall’s (1987) approach to coordination, and by assuming (supported by evidence from the Latin conjunction *-que*), that conjunctions are contained within the second conjunct of a coordinated structure.

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the DP. This provides evidence that “phase” and “spell-out domain” are really separate objects, which has not been necessary to assume previously.

<sup>24</sup> There is a second way in which the Local Dislocation of *-que* does not seem to respect phase impenetrability. Even if *-que* is part of the spell-out domain of the second conjunct, it is predicted that it will “skip” spell-out domains (e.g. relative clauses) at the left edge of the second conjunct, just like the Amharic definite marker. There is a limited amount of data on *-que* in the literature, but if it is true that *-que* always attaches to the first word of a conjunct, it seems that this prediction will be false. This may indicate that there is a distinction between phase-sensitive and non-phase-sensitive Local Dislocation, which in turn seems to echo an older distinction: word-level vs. phrase-level affixation. Exploring how word-level and phrase-level affixation should be captured in Distributed Morphology is beyond the scope of this paper. However, Local Dislocation is already subdivided into at least two varieties depending on what kind of units are manipulated (Morphological Word and Sub Word; Embick and Noyer 2001, Embick 2007), so there may be a kind that is comparable to phrase-level affixation.

### 4.5.3 Embick 2007: French

In Embick 2007, it is suggested that PF operations apply cyclically, although there is no discussion of phase impenetrability per se. In this section, I briefly examine Embick's (2007) analysis of French prepositions and determiners and show how it fits with the assumptions about phase impenetrability argued for here.<sup>25</sup>

In French, certain prepositions (*à, de* et al.) and certain determiners (*le, les*) usually combine to form one portmanteau morpheme. However, they do not combine if the determiner attaches to a vowel-initial word.

- (60) a. du chat (\*de le chat)  
 b. de l'arbre (\*du arbre) (Embick 2007: (38a), (40))

Embick proposes that (60)a is an instance of Lowering from P-to-D, whereas in (60)b the determiner undergoes (string-vacuous) Local Dislocation to attach to the noun. However, since Lowering precedes Local Dislocation, it may seem as if D can never attach to a vowel-initial word: P will always lower to D first. But if PF operations apply cyclically, the determiner can attach to the noun during the DP cycle, i.e. during the spell-out of the DP phase. This bleeds Lowering at the next cycle since the D has adjoined to the N and is no longer a separate head on its own.

The account of phase impenetrability here, though, may seem to prevent P-to-D Lowering at all. D will have been spelled out by the time P-to-D Lowering is supposed to happen, i.e. it is within an impenetrable chunk of material. However, D is at the edge of the domain, and the edge is still accessible to operations since its linearization has not yet been set. Moreover, Embick (2007:18) suggests that vocabulary is not inserted at D during its initial spell-out. Combining these ideas creates a workable solution: P can licitly attach to the edge of the DP domain, and when vocabulary is inserted for the cycle that contains P, it spells out the adjoined P and D as one item – the portmanteau morpheme. Thus, the conclusions reached in Embick 2007 about cyclicity with respect to French can be maintained in the current analysis of phase impenetrability.

## 4.6 Interim Summary

In this section, I have demonstrated that the definite marker attaches to a host via the morphological operation Local Dislocation, which operates over a linearized string. The definite marker seems to attach non-locally in some cases due to a combination of factors: the phase-hood of the elements that immediately follow it, the impenetrability of phases at PF, and the availability of the edges of a domain to serve as hosts. It was shown that this analysis can account for the coordination data, and that it is compatible with previous work on PF cyclicity by Embick (2007).

## 5 EXTENDING THE ANALYSIS: ADDITIONAL EVIDENCE FOR LOCAL DISLOCATION

The discussion above focuses on a relatively small set of data: definite-marking in DPs that either have no modifiers, or contain an adjective and/or a relative clause. In this section, I extend the analysis to data from some additional DP-internal phenomena in Amharic, specifically, free relatives, DPs containing numerals, and nominal compounds. I show that the placement of the definite marker in all cases can be accounted for under the Local Dislocation analysis developed in Section 4.

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<sup>25</sup> For an alternative view on French prepositions and determiners, see Teeple 2007.

## 5.1 Free Relatives

Amharic free relatives (discussed in Leslau 1995:93-95, Mullen 1986:347, Kapeliuk 1988:93-95) are very similar to DPs containing headed relatives. They have the external distribution of DPs, appearing as subjects, objects and objects of prepositions. Also, except for the lack of head noun, they are formally identical to headed relatives. They do not have *wh*-words, they contain the complementizer *yä-* (*yämm-* before imperfect verbs), and, crucially, they can take the definite marker. A subject free relative in subject position is in (61), and an object free relative in object position is in (62).

(61) **izzih yä-mät't-a-w** wändimm-e näw **Subject**  
 here C-come.PF-3MS-DEF brother-my is  
 The one who came here is my brother. (Leslau 1995:93)

(62) **yämm-i-fällig-u-t-in** al-agänn-u-mm **Object**  
 C-3PL-want.IMPF-3PL(SUB)-3MS(OBJ)-ACC NEG-find.PF-3PL-NEG  
 They didn't find what they wanted. (Leslau 1995:94)

In (61), the free relative *izzih yämät't'aw* ‘the one who came here’ has the complementizer *yä-*, a definite marker at its right edge, and no *wh*-word. It is formally indistinguishable from a semantically comparable headed relative (*izzih yämät't'aw säw* ‘the person who came here’) except for the lack of head. In (62), the free relative is the direct object of the verb *agännü* ‘find,’ and it is marked for accusative case (the suffix *-n*). Note that there is no definite marker because there is an object agreement marker; definite markers and object agreement markers are in complementary distribution (see fn. 4).<sup>26</sup>

For present purposes, the most important fact is that the definite marker always attaches to the right edge of a free relative. It cannot attach to any free relative-internal material, as in (63).

(63) \* **izzih-u yä-mät't-a** wändimm-e näw  
 here-DEF C-come.PF-3MS brother-my is  
 The one who came here is my brother.

This is again very similar to definite-marking in headed relatives, where the definite marker always attaches to the right edge of the CP relative clause. In order to determine whether or not the Local Dislocation analysis makes the right predictions here, though, it is necessary to have a better sense of the internal syntax of free relatives.

Free relatives have been the focus of a large amount of linguistic research, both syntactic and semantic. On the syntactic side, a central question is whether free relatives are DPs (like headed free relatives without the head, more or less) or CPs (more like interrogatives). Amharic free relatives are more immediately compatible with DP theories, not only because of the distributional and formal similarities between free relatives and headed relatives, but also because the D is overtly realized as

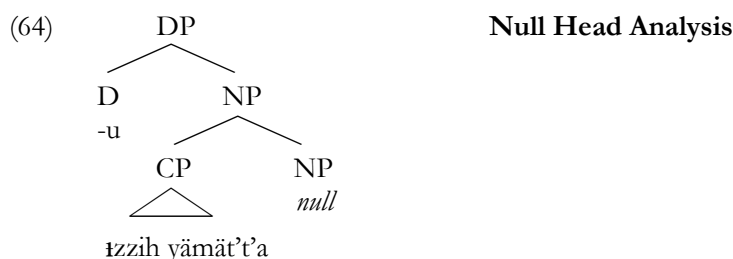
<sup>26</sup> Some Amharic free relatives do not take a definite marker even though they do not have object agreement.

(1) **bä-s'om yä-t-arräd-ä** ayt-bbäll-a-mm  
 on-fast.day C-PASS.slaughter-3MS NEG-eat.PASS-3MS-NEG  
 Anything slaughtered on fast day cannot be eaten. (Leslau 1995:93)

It is possible that these are best analyzed as ‘existential’ free relatives (Caponigro 2003: Ch.3, Grosu 2004 *inter alia*). Existential free relatives never refer to maximal entities (and thus cannot be paraphrased with a definite DP) and appear as complements of certain existential and modal predicates.

the definite marker. I will thus discuss DP accounts first and return to whether CP accounts are compatible with the definite-marking facts further below. It is important to note that the primary goal of this subsection is not to develop and defend a particular analysis of Amharic free relatives (which is outside of the scope of the current investigation). The aim is more modest, simply to investigate whether any of the previously-proposed analyses of free relatives can predict the position of the definite marker given the Local Dislocation analysis developed in Section 4.

The existing DP analyses of free relatives can be divided into two categories: the null head analysis, and the wh-head analysis. Both can successfully predict the definite-marking pattern in concert with the Local Dislocation analysis of definite-marking. Under the null head analysis, free relatives are structurally identical to headed relatives, except that the head of the relative clause is a null category of some kind (Groos and van Riemsdijk 1981, Hirschbühler and Rivero 1981, 1983, Rivero 1984, 1986, Harbert 1983, Suñer 1983-84, 1985, and Grosu 1989, 1994, 1996; see also Grosu 2003 where a null head analysis is adopted but free relatives are not necessarily DPs). A sample tree for this kind of analysis applied to the Amharic data is in (64).



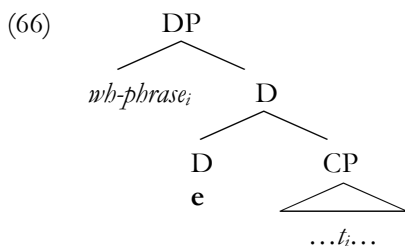
If the Local Dislocation analysis of the definite marker is assumed, the position of the definite marker is correctly predicted under the null head analysis. The tree in (64) is linearized as in (65), and then the definite marker undergoes Local Dislocation with the CP.

(65) [-u \* [tʒzih yämät't'a]] → [tʒzih yämät't'a-w]

The definite marker cannot attach within the CP because that would violate the Phase Impenetrability Condition.

In the wh-head analysis, roughly the same predictions are reached. Under this analysis, the 'head' of the free relative is a wh-phrase which is either merged or moved to a position outside the free relative (Grimshaw 1977, Bresnan and Grimshaw 1978, Larson 1987, 1998, Kayne 1994, Iatridou, Anagnostopoulou and Izvorski 2001, Citko 2002). Since Amharic relative clauses lack wh-phrases, it may be that a null operator would merge/be moved to the head (NP) position. The resulting structure would be the same as (64), so the definite marker would again be correctly predicted to attach to the right edge of the CP.

It is more difficult to straightforwardly adapt analyses where relative clauses are CPs to the Amharic data (Caponigro 2002, 2003 and references therein). However, as Caponigro (2003: 79-80) observes, most of these theories must postulate arbitrary nominal characteristics for C or the CP projection to account for the DP-like distribution of free relatives. For example, in Caponigro 2002, the free relative is an interrogative CP with a DP 'shell' above. The D head is covert, and is licensed by the wh-phrase moving to Spec,DP.



If this analysis is transposed directly to the Amharic data, the position of the definite marker is still predicted by the Local Dislocation analysis. The *wh*-phrase would presumably be a null operator, and thus not present after Vocabulary Insertion. I assume that *D* would be overt and realized by the definite marker. When linearized, then, the definite marker would precede a previously spelled-out CP, exactly as in the DP analyses of free relatives. It seems, then, that the Local Dislocation analysis is compatible with at least some versions of the CP analysis of relative clauses, as long as the required nominal properties are formally instantiated by a *D* head.

However, it is worth noting that Caponigro (2003) would not consider Amharic free relatives to be free relatives at all since they do not have *wh*-words. He discusses similar ‘free relatives’ in Spanish and English which do not have *wh*-words, but do have an overt determiner. A Spanish example is in (67).

- (67) [lo que Pedro vio] fue increíble.  
 the that Pedro saw was incredible  
 What Pedro saw was incredible. (Gutiérrez-Rexach 2002:120, Caponigro 2003:19)

Caponigro (2003:19-20) argues that these are headed relative clauses, with the determiner as the head. The syntactic ramifications of the determiner being the head are unclear; it could perhaps be merged in *D* and take a CP complement, or it could be the spell-out of some underspecified but definite N head. Again, regardless, the Local Dislocation analysis makes the right predictions. In the former case, there would be the same predictions as with (66). In the latter case, where the definite marker is an N, the definite marker would essentially ‘lean’ leftwards (more technically, it would undergo string-vacuous Local Dislocation) to attach to the right edge of the CP. It might not be the case that *wh*-words are a defining property of free relatives<sup>27</sup>, but even if so, it is not a problem for the Local Dislocation analysis.

To sum up this subsection, the Local Dislocation analysis of the definite marker does not help to distinguish between different theories of the syntax of relative clauses. No matter how the syntax is worked out, the correct position of definite marker is predicted (with the possible exception of some CP accounts of free relatives). This is a welcome result for the Local Dislocation analysis, and it is not unsurprising. All that the Local Dislocation analysis requires to make the correct predictions is that the definite marker precedes the relative clause CP at Linearization. Definite-marking patterns in free relatives, regardless of their particular syntax, are therefore easily accounted for under the Local Dislocation analysis.

<sup>27</sup> From a practical perspective, it is reasonable for Caponigro to limit his study to free relatives with *wh*-words, but making *wh*-words a requirement for being a free relative may be too restrictive. Unlike in Spanish and English, there is no other way to form free relatives in Amharic. Would Amharic then lack free relatives altogether? Also, although Caponigro’s study draws on data from a variety of languages, it does not include data from many SOV or *wh*-in-situ languages. I suspect that these languages may be less likely to have *wh*-words in free relatives.

## 5.2 Compounds

Nominal (noun-noun) compounds are very common in Amharic (Leslau 1995: 247-250, Cohen 1936: 86-91, Hartmann 1980:310-315), and pose an interesting challenge for the Local Dislocation account of definite marking. Some examples are in (68).

- (68) a.  $\text{t}\bar{\text{m}}\text{h}\bar{\text{r}}\text{t}$  bet      b. bunna nāggade      c. mäs'haf s'afi  
       learning house      coffee merchant      book writer  
       school                coffee merchant      author

All of the compounds I will examine here are endocentric and right-headed. Note that (68)c is an instance of what Fabb (1998) calls a 'synthetic compound' where the head of the compound is deverbal, and the left-hand component is the complement of the verb. Each noun-noun compound is treated as 'one word' with respect to the syntax and the morphology, a single unit that cannot be separated syntactically and receives a single set of the relevant nominal inflection. For example, no adjective can intervene between the two members of a compound, even if the adjective could not be interpreted as modifying the first member of the compound (see (70) and (71)).

- (69) a. \* $\text{t}\bar{\text{m}}\text{h}\bar{\text{r}}\text{t}$   $\text{t}\bar{\text{a}}\text{l}\bar{\text{l}}\bar{\text{k}}'$  bet      b.  $\text{t}\bar{\text{a}}\text{l}\bar{\text{l}}\bar{\text{k}}'$   $\text{t}\bar{\text{m}}\text{h}\bar{\text{r}}\text{t}$  bet  
       learning big house      a big school
- (70) a. \*bunna rād $\text{ʒdʒ}\bar{\text{t}}\bar{\text{m}}$  nāggade      b. rād $\text{ʒdʒ}\bar{\text{t}}\bar{\text{m}}$  bunna nāggade  
       coffee tall merchant      a tall coffee merchant
- (71) a. \*mäs'haf rād $\text{ʒdʒ}\bar{\text{t}}\bar{\text{m}}$  s'afi      b. rād $\text{ʒdʒ}\bar{\text{t}}\bar{\text{m}}$  mäs'haf s'afi  
       book tall writer      a tall author

In contrast, adjectives can intervene between a possessum and a possessor.

- (72) yä-Girma k'äyy makina  
       of-Girma red car  
       Girma's red car

Also, the plural suffix, the case suffix and the set of possessive suffixes attach only to the second member of the compound, as if the compound were a single N head. Examples with the plural suffix  $(-w)\text{ot}\{\bar{\text{t}}\bar{\text{f}}\}$  are in (73).

- (73) a.  $\text{t}\bar{\text{m}}\text{h}\bar{\text{r}}\text{t}$  bet- $\text{ot}\{\bar{\text{t}}\bar{\text{f}}\}$       'schools'  
       b. bunna nāggade- $\text{wot}\{\bar{\text{t}}\bar{\text{f}}\}$       'coffee merchants'  
       c. mäs'haf s'afi- $\text{wot}\{\bar{\text{t}}\bar{\text{f}}\}$       'authors'

Given this evidence, I propose that Amharic nominal compounds have the following N-adjunction structure (see Spencer 1991:319 for arguments for this structure for similar compounds in Turkish).

- (74)
- $$\begin{array}{c}
 \text{N} \\
 \swarrow \quad \searrow \\
 \text{N} \quad \quad \text{N} \\
 \text{bunna} \quad \quad \text{nāggade}
 \end{array}$$

The second member of the compound is the head N, and the first member is a second N adjoined to the head. This immediately prevents adjectives from intervening between the two heads, and allows for the entire compound to be treated as one nominal head by the morphology.<sup>28</sup>

Definite marking in compounds follows a simple pattern. Definite markers attach only to the second member.

- (75) a. *tɪmhɪrt bet-u* 'the school'  
 b. *bunna nǎggade-w* 'the coffee merchant'  
 c. *mǎs'haf s'afi-w* 'the author'

Under a Local Dislocation analysis of the definite marker, this is easily accounted for given the Typing Assumption on Local Dislocation (Embick 2007, Embick and Noyer 2001). In Embick and Noyer 2001 and Embick 2007, two types of morphological objects are distinguished: morphosyntactic words (M-words) and subwords (S-words). The definitions of these objects are below.

- (76) a. M-Word: Potentially complex head not dominated by further head-projection  
 b. S-Word: Terminal node within an M-Word and not an M-Word  
 (Embick and Noyer 2001:574, Embick 2007:3)

In (74), the topmost N node is a M-word, whereas each lower N node is a S-word. The Typing Assumption on Local Dislocation states that only like can dislocate with like, i.e. M-words can only dislocate with M-words and S-words can only dislocate with S-words.<sup>29</sup> The crucial point here is that the definite marker is an M-word; it is a simple D head not dominated by further head-projection. Therefore, it must dislocate with M-words, and in this case, the entire M-word compound.

- (77) [-u \* [bunna nǎggade]] → [bunna nǎggade-w]

If it were to dislocate with the first member of the compound, it would go against the Typing Assumption. In effect, compounds form another kind of morphological unit that is opaque to (M-word) Local Dislocation. Definite marking on compounds can thus be straightforwardly accounted for under a Local Dislocation analysis, using an independently proposed restriction on the mechanics of Local Dislocation.<sup>30</sup>

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<sup>28</sup> In the literature on compounds (for an overview, see Spencer 1991, Fabb 1998), it has often been an important question whether the adjunction in compounds like in (74) occurs in the lexicon or in the syntax. In Distributed Morphology, there are no lexical operations, so I assume that the two nouns are distinct heads in the syntax. This is not central to the current investigation, and I believe the conclusions reached will be applicable either way.

<sup>29</sup> In Embick 2007, the Typing Assumption is derived from certain hypotheses about linearization and the mechanics of Local Dislocation. I refer to it as an assumption in the text for expository purposes.

<sup>30</sup> There is one further wrinkle to the data. Certain compounds can also appear with *yǎ-* preceding the first member. This is ungrammatical with compounds like (68)a and grammatical with compounds like (68)b. The prefix *yǎ-* most frequently marks possessors, but it is well known to mark many different kinds of relations between two nominals (see e.g. Kapeliuk (1994:95-100) on 'the descriptive *yǎ-* complex'). The definite marking facts with *yǎ-*-marked compounds are not entirely clear. Leslau (1995: 247) reports that the definite marker may go on either member, but fieldwork indicates less flexibility. There is unfortunately not space for thorough description or treatment of these facts, and they must remain a puzzle to be addressed in future work.

### 5.3 Numerals

In this section, I examine patterns of definite marking when a DP contains cardinal numerals (*five, eighteen, fifty* etc.; I will refer to them henceforth simply as ‘numerals’).<sup>31</sup> Data from numerals not only provides additional support for the Local Dislocation analysis of definite marking, but shows how the Local Dislocation analysis can be used to distinguish between competing analyses.

Numerals precede the noun in Amharic.

- (78) a. *sost tämari-wotʃtʃ*  
 three student-PL  
 three students
- b. *amsa siddist tämari-wotʃtʃ*  
 fifty six student-PL  
 fifty six students
- c. *ammist ʃih tämari-wotʃtʃ*  
 five thousand student-PL  
 five thousand students

In a definite DP, the definite marker attaches to the right edge of the numeral.

- (79) a. *sost-u tämari-wotʃtʃ*  
 three-DEF student-PL  
 the three students
- b. \**sost tämari-wotʃtʃ-u*

The same pattern holds for higher and internally complex numerals. In higher numerals formed both by addition (80) and by multiplication (81), the definite marker must attach to the right edge of the numeral.

- (80) a. *asra aratt-u tämari-otʃtʃ*  
 ten four-DEF student-PL  
 the fourteen students
- b. \**asra-w aratt tämari-otʃtʃ*
- (81) a. *hulätt mäto-wotʃtʃ-u tämari-otʃtʃ*  
 two hundred-PL-DEF student-PL  
 the two hundred students
- b. *hulätt-u mato tämari-otʃtʃ*

Even very complex numerals can only have the definite marker at the right edge.

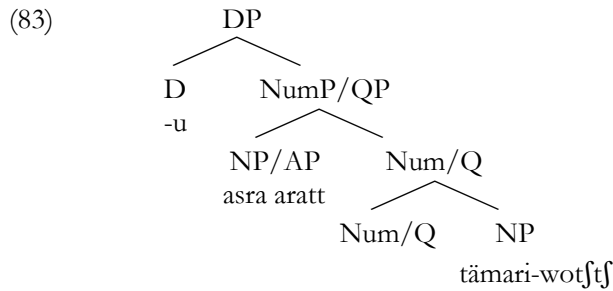
- (82) *and milyon aratt mäto hamsa ʃih-otʃtʃ-u wättädär-otʃtʃ*  
 one million four hundred fifty thousand-PL-DEF soldier-PL  
 1,450,000 soldiers

In (82), it is ungrammatical for the definite marker to be attached to any other element besides *ʃih* ‘thousand.’

<sup>31</sup> For a general description of Amharic numerals, see Leslau 1995:251-265 and Kapeliuk 1994:78-81.

The pattern of definite marking with numerals is very familiar since the definite marker often appears to ‘skip over’ large amounts of linguistic material to attach to the right edge of a constituent. Under the Local Dislocation analysis, it must be that this constituent is either part of a phase that has been previously spelled-out, or, as discussed in Section 5.2, that it is part of a compound that comprises one M-word. In the remainder of this section, I briefly review the syntactic literature on numerals. Several of the proposals that have been made are compatible with complex numerals being either a phase or a large compound. However, some are not, and definite-marking thus provides an empirical way to distinguish the various proposals.

Within the syntactic literature, there are three main analyses of numerals: the specifier analysis, the functional head analysis and the nominal/mixed analysis.<sup>32</sup> In the specifier analysis, the numeral is an NP or AP specifier of a NumP or QP projection (see e.g., Selkirk 1977, Jackendoff 1977, Li 1999, Haegeman and Guéron 1999, Gawron 2002, Zabbal 2005, see also Corver 2001).



NPs have never been considered to be phases, but I assumed earlier that APs (DegPs) are phases. Given this, the specifier analysis can predict definite marking in numerals only if the numeral is an AP specifier. In that case, the definite marker dislocates with the previously-spelled out AP.

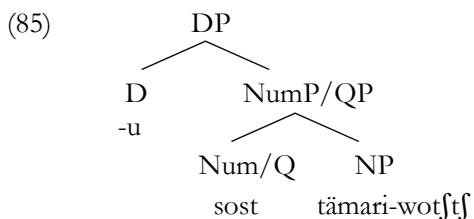
(84) [-u \* [asra aratt] \* tämari-wot{tʃ}] → [ asra aratt-u \* tämari-wot{tʃ}]

If the numeral is an NP, though, since it will not have been previously spelled out, it will therefore be accessible to later morphological operations. The definite marker will then be predicted to dislocate with the first head in the NP (i.e. *asra* ‘ten’, which is ungrammatical, see (80)b). The functional approach thus has mixed success with respect to definite marking; it is compatible with the Local Dislocation analysis, but only if all numerals are adjectives.<sup>33</sup>

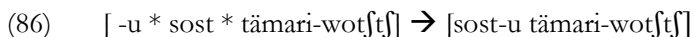
The functional head analysis fares better with respect to definite marking. In the functional head analysis, a numeral is a Num/Q (see e.g., Ritter 1991, Giusti 1991, 1997, Barbiers 1992, Zamparelli 2000, 2002).

<sup>32</sup> The discussion here is very much informed by the extensive literature review in Ionin and Matushansky 2005.

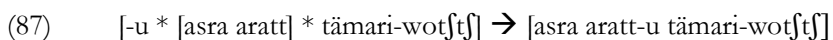
<sup>33</sup> It is not a trivial question whether numerals are adjectives or nouns. In many (if not most) languages, numerals display mixed adjectival and nominal properties with lower numerals having more adjectival properties and higher numerals having more nominal properties (Corbett 1978, see also Hurford 2001). I leave open the question of whether Amharic numerals are best analyzed as adjectives or nouns or some combination of the two. Note also that although the specifier analysis is incompatible with Amharic numerals being nouns, not all analyses are -- see below.



With simple numerals, the definite marking facts are easily accounted for. The definite marker dislocates with the numeral that it immediately precedes.

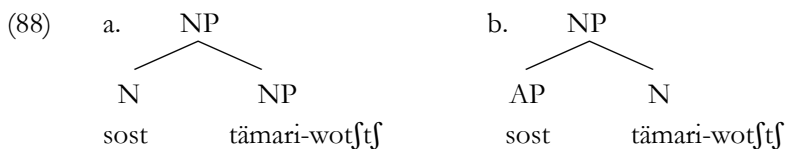


For complex numerals, it is slightly more complicated but workable. The functional head analysis was not developed in order to account for complex numerals, and it has been remarked that it is implausible for a very internally complex numeral to be a single head (see e.g. Zweig 2005). However, it is well-known that heads can have complex internal structure, and if this possibility is granted for numerals, the definite-marking facts fall out. A numeral would be a single complex head, i.e., an M-word, and just as with compounds above, the definite marker would dislocate with the entire M-word.



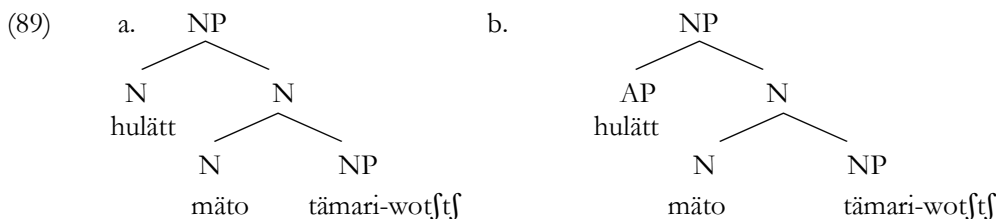
The functional head analysis combined with the Local Dislocation analysis of definite marking can thus correctly predict the facts.

The nominal/mixed analyses take an entirely different approach to numerals, attempting to strike a balance between the adjectival and nominal properties associated with numerals (Ionin and Matushansky 2004, 2005, 2006, Zweig 2004, 2005). I will focus on work by Ionin and Matushansky in the discussion, but the conclusions apply equally well to Zweig 2004, 2005. In Ionin and Matushansky 2005, a simple cardinal numeral is a lexical N that takes an NP complement, or an AP specifier of NP (depending on whether simple numerals are adjectival in a given language; Ionin and Matushansky 2004, 2006 do not have as much detail on adjectival numerals, but contain the same analysis with respect to nominal numerals).

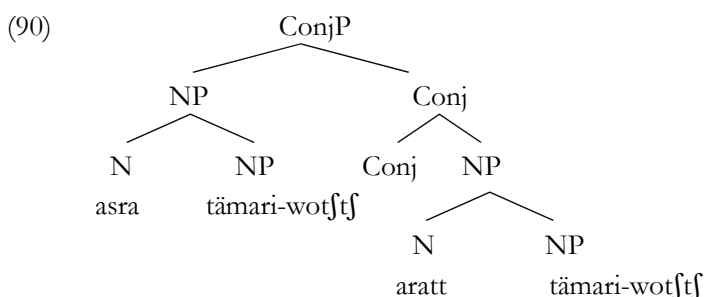


Either (88)a or (88)b makes the correct predictions for definite-marking. In (88)a, the definite marker would simply dislocate with the N *sost* ‘three,’ whereas in (88)b it would dislocate with the previously spelled-out AP.

The nominal/mixed analyses are less successful with complex numerals. For multiplicative numerals, Ionin and Matushansky (2005) propose two structures, one where both numerals are nominals, and one where one of the numerals is an AP.



Neither version correctly predict the definite marking facts. In (89)a, the definite marker would dislocate with the first N since NP is not a phase, resulting in the ungrammatical string *\*hulätt-u mätö* (see (81)b). In (89)b, the same result is achieved since the definite marker would dislocate with just the AP. The situation does not improve with additive complex numerals, which Ionin and Matushansky (2004, 2005, 2006) propose are coordinated NPs.



To derive the surface order, either both instances of *tämari-wotʃtʃ* ‘students’ undergo right-node raising, or the leftmost *tämari-wotʃtʃ* ‘students’ is elided. In Amharic, though, the definite marking facts in coordinated constituents are significantly different than the definite marking facts in additive complex numerals. Recall from Section 4.2 that (overtly) conjoined constituents must both take the definite marker.

- (91) Coordinated APs  
 t’ik’ur-**u** {ɪnna / wäyɪss} sämayawi-**w** kwas  
 black-DEF and/or blue-DEF ball  
 the black and/or blue ball

Ionin and Matushansky propose that even if they are asyndetically coordinated, additive numerals still have a coordinate structure. If this is the case, the following ungrammatical form would be predicted.

- (92) \*asra-w aratt-u tämari-wotʃtʃ  
 ten-DEF four-DEF student-PL

The nominal/mixed analysis thus is unable to predict definite-marking patterns in complex Amharic numerals.<sup>34</sup>

Taking stock of this section, it has been shown that the Local Dislocation analysis of definite-marking is compatible with several current analyses of numeral syntax: the specifier analysis (if the specifier is an AP), the functional head analysis, and the nominal/mixed analysis of simplex

<sup>34</sup> It is possible to overtly coordinate numerals in Amharic with the preposition *kä-* ‘with,’ e.g. *ʃi sammɪnt mätö kä-sɪsa* ‘thousand eight hundred with-sixty’ 1860 (Leslau 1995:256). However, overtly coordinated numerals do not occur prenominal since they are only used for dates, telling the time and counting out change.

numerals. It also distinguishes between several of the analyses -- the nominal/mixed analysis of complex numerals makes incorrect predictions.

#### 5.4 Interim Summary

Overall, this section has extended the analysis of definite marking to three new empirical domains: free relatives, compounds and numerals. In each case, it was found that the Local Dislocation analysis can correctly predict definite-marking given certain previously-proposed and/or reasonable analyses of the relevant constructions. Moreover, if the Local Dislocation analysis is assumed to hold for definite marking in numerals, it furnishes new argumentation in favor of and against conflicting analyses of numeral syntax.

## 6 CONCLUSION

The primary goal of this chapter was to provide a Distributed Morphology/Minimalist analysis of definite marking in Amharic. I argued that an obligatory definite marker is the realization of a syntactic head D that has undergone Local Dislocation. From a theoretical perspective, the account developed here maps out certain key properties of the syntax-morphology interface and morphological operations. In the standard Minimalist view, syntactic material is sent to PF in a piecemeal fashion by spell-out domain. In the analysis of obligatory definite marking, this cyclicity was shown to carry over to PF. Evidence was presented that morphological operations cannot access previously spelled-out phases  $\alpha$  (i.e., the Phase Impenetrability Condition holds at PF). However, it was shown that a previously spelled-out phase, although opaque, is not invisible. It is treated like a simple head – a single unit of material with no internally accessible structure, but the ability to host other heads at its edges.

In Chapter 3, the remainder of the picture empirically is filled in. I develop an analysis of optional definite markers, and the analysis turns out to necessitate certain refinements to the notion of PF cyclicity that has emerged from this chapter.