

The Amharic Definite Marker and the Syntax-Morphology Interface*

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Abstract: The definite marker in Amharic has an unusually complex pattern of distribution --- its position varies depending on whether the DP contains an adjective, a relative clause, multiple adjuncts, a demonstrative, or just a noun. In this paper, a Minimalist/Distributed Morphology analysis of the definite marker is developed based on the idea that the definite marker is the realization of D when it is obligatory, and the reflex of a definiteness agreement process when it is optional. Evidence is presented that D undergoes the morphological operation Local Dislocation (Embick and Noyer 2001) in Amharic, and that Local Dislocation is subject to the Phase Impenetrability Condition --- the definite marker cannot attach within a phase that has been previously spelled out. Definiteness agreement, however, does not seem to respect phase impenetrability, which leads to the suggestion that phase impenetrability is only relevant after Linearization. From a broader perspective, the paper explores the effect of Minimalist assumptions about syntactic cyclicity (cyclic spell-out by phase, phase impenetrability) on the cyclicity of morphological operations.

Keywords: definiteness, phase impenetrability condition, Distributed Morphology, Spell-Out, agreement, Amharic.

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 (2003) suggests that some morphological operations do apply cyclically, and here I build on Embick's insight and connect it to phase impenetrability using evidence from definite marking in Amharic (Ethio-Semitic). I argue that if a phase has been previously spelled out, it is impenetrable to morphological operations at later spell-outs, i.e. the Phase Impenetrability Condition (Chomsky 2000, 2001, 2004) can apply 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

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distribution can be easily accounted for by assuming that D undergoes Local Dislocation (Embick and Noyer 2001, Embick 2003) 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 definiteness agreement process does not respect phase impenetrability, and this leads me to suggest that phase impenetrability does not come into play until a late stage of PF (after Vocabulary Insertion and Linearization).

This research is connected to recent work on definite markers in Scandinavian languages (see e.g., Hankamer and Mikkelsen 2005, Heck, Müller and Trommer 2008) and in Bulgarian (see e.g., Embick and Noyer 2001, Dost and Gribanova 2006). 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 paper is in Section 2, which contains the data on obligatory and optional definite marking. Previous accounts of definite marking and how to approach an analysis of definite marking in general are discussed in Section 3. The analysis of obligatory definite marking is presented in Section 4, and the analysis is supported by additional data in Section 5. Section 6 contains the analysis of optional definite marking, and Section 7 concludes.

2 DEFINITE MARKING IN AMHARIC

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. nɨgɨst-wa |
| | house-DEF | queen-DEF.F |
| | the house | the queen ¹ |

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, the complex data on where the definite marker attaches within the DP is presented.

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. Specifically, it requires a host to its left (in conventional terms, it is a suffix or an enclitic).² In the simplest pattern

¹ Gloss abbreviations: 3 - third person; ACC - accusative; AUX - auxiliary; C - complementizer; DEF - definite marker; F - feminine; 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].

² It is important to clarify the assumptions made about the terms affix and clitic. Affixes are conventionally said to 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 in the syntax or later. Distributed Morphology, however, specifically rejects Lexicalism and lexical composition, and thus the conventional difference between clitics and affixes. In Distributed Morphology, 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, and, while I do develop an analysis of how the definite

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

If the DP contains an AP, though, then the definite marker attaches to the adjective. All APs are prenominal.

- (3) a. tɨllɨk’-u bet big-DEF house ‘the big house’
b. t’ɨk’ur-u dɨmmät black-DEF cat ‘the black cat’

If the AP is complex, the definite marker still attaches to the adjective, which is always at 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.

- (4) a. [bät’am tɨllɨk’-u]_{AP} bet very big-DEF house
b. [bät’am bät’am tɨllɨk’-u]_{AP} bet very very big-DEF house
c. [ɨdʒɨɨg bät’am tɨllɨk’-u]_{AP} bet really very big-DEF house
- (5) * [bät’am-u tɨllɨk’]_{AP} bet very-DEF big house

The definite marker also attaches to the adjective if the adjective has a complement.³

- (6) [lä-mist-u tammaññ-u]_{AP} gäs’ābahriy
to-wife-his faithful-DEF character
the faithful-to-his-wife character

Similarly, if there is a relative clause, the definite marker attaches to the right edge of the relative clause. A simple example is in (7).

- (7) yä-särräk’-ä-w ɨdʒ
C-steal.PF-3MS-DEF child
the child who stole

Amharic relative clauses contain finite verbs, have the same word order as main clauses (SOV), and are always prenominal. There are no *wh*-words, but there is a complementizer *yä*. The relative clause in (7) consists only of a verb (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. If the relative clause is more complex, the definite marker still attaches to the right edge, and this is demonstrated in (8). The definite marker “skips” an adjunct in (8)a, an argument in (8)b, and an embedded CP in (8)c.

marker is attached to its host, I do not discuss whether it should be labeled a clitic or a suffix due to some characteristic of that attachment.

³ Note that 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’ (*wanna-w nägär* ‘main-DEF thing’) and with an ordinal numeral (*bulättännä-w bet* ‘second-DEF house’).

- (8) a. [tɪnantɪnna yä-mät't'-a-w] tämari [adjunct]
 yesterday C-come.PF-3MS-DEF student
 the student who came yesterday
- b. [ɪbab yä-gäddäl-ä-w] lidʒ [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 appears to attach to the right edge of a preceding AP or CP.⁴

Amharic is a head-final language, and this may make it seem like the distribution of the definite marker can be described with a different generalization: the definite marker attaches to the lexical head of an AP or CP (i.e. it attaches to an adjective or a lexical verb). However, this generalization can be proven not to hold with evidence from two sources: relative clauses and numerals. Lexical verbs are in fact **not** always final in Amharic; as in many head-final languages, auxiliaries follow the finite verb and are final in the clause. This is relevant for the distribution of the definite marker in relative clauses.

- (9) [mäš'haf-u-n y-anäbbä-w yä-näbbärä-w]_{CP} tämari
 book-DEF-ACC 3MS-read.IMPF-3MS C-be.AUX-DEF student
 the student who was reading the book (Leslau 1995:87)

In (9), the lexical verb *yänäbbäw* 'reading' is not at the right edge of the CP. Nevertheless, the definite marker still attaches to the right edge, in this case to the auxiliary *näbbärä* 'was.' Additional evidence that the definite marker does not always attach to lexical heads is seen in Section 5, where data from complex numerals is presented. In a complex numeral like *one million four hundred fifty thousand*, it is unclear which of the component numerals is the lexical head (if any). Nevertheless, in Amharic (where numerals are pre-nominal, and the order of the complex numeral is as in English), the definite marker always attaches to the rightmost component of a complex numeral. Thus, I conclude that the definite marker cannot be described as (always) attaching to lexical heads.⁵

Returning to the data, adjectives and relative clauses are both adjuncts, and multiple adjuncts can 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.

⁴ The morphophonology of the definite marker on relative clauses is somewhat different. The masculine singular definite marker (-*u*) is homophonous with the 3rd 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 in complementary distribution on relative clause verbs -- i.e., a relative clause verb that has an object agreement marker cannot be marked for definiteness. Also, 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. French). See discussion in Leslau 1995: 83-87 and suggestions for an analysis in Mullen 1986.

⁵ Thanks to an anonymous reviewer for raising this issue. The reviewer also notes that in several Balkan languages, suffixal/enclitic definite markers can be proven to attach to lexical heads (see Dimitrova-Vulchanova and Giusti 1998, Giusti 2002). There seems to be an interesting contrast here between Balkan definite markers (attach to lexical heads) and Semitic definite markers (attach to edges of phrases). See also Shlonsky 2004 (1472-1475) for evidence that in other Semitic languages, the definite marker attaches to the left edge of an entire AP.

- (10) **tɪllɪk'-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.

- (11) **k'ondʒo-w tɪllɪk'(-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 either or both of the additional adjectives may be optionally marked. If an adjective and a relative clause modify the same nominal, the relative clause is obligatorily marked, and the adjective can be optionally marked.

- (12) [**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 adjuncts are optionally marked.

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

- (13) **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, though, can be found in the conclusion.

DPs containing demonstratives seem to have no definiteness marking at all, no matter where the definite marker attempts to attach.

- (14) a. ya bet b. *ya bet-u c. *ya-w bet
that house that house-DEF that-DEF house⁶

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

- (15) ya **tɪllɪk'(-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.

Before concluding, it is worth looking briefly at definite marking in possessive DPs. Amharic possessors are prepositional phrases (using the preposition *yä-*, homophonous with the

⁶ 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,” (*yaw* can also mean ‘the same’), *yähaw* “this one.”

relative clause complementizer⁷), and are significantly different from the typical Semitic construct state (see discussion in Kapeliuk 1994:90-108, den Dikken 2007:312).

- (16) yä-lɔɖɜ-u dəbtär
 of-boy-DEF notebook
 the boy's notebook (Leslau 1995:193)

Intuitively, the connection between the possessor and possessed noun phrase in Amharic is much looser than in the construct state. There is no phonological alteration or reduction of the possessed noun phrase, and other elements can intervene between the possessor and possessed noun phrase.

With respect to definite-marking, the definite marker on the possessor in, say, (16), is associated with the possessor alone, and not with the entire DP in which the possessor is embedded. For example, as noted by Ouhalla (2004), proper names are not marked for definiteness in Amharic, and when there is a proper name possessor (like (17)) there is no definite marking. This is true even if the entire DP is definite, as indicated by the accusative case marking (case marking is differential depending on definiteness).

- (17) yä-Girma-n bet
 of-Girma-ACC house
 Girma's house (acc.)

Cross-linguistically, it is not unusual for definite articles/markers not to surface in possessive DPs. This is true notably in the English Saxon genitive (**the Mary's house*, **Mary's the house*) as well as the Semitic construct state (lack of definite-marking is the one property Amharic and construct state possessors share).⁸ Many different kinds of proposals have been made to account for the lack of definite-marking, ranging from the morphosyntactic (e.g., Ritter 1991) to the phonological (e.g., Siloni 2003) to the semantic (e.g., Heller 2002), even for just one language (Hebrew). Most analyses assume that possessive DPs do not contain definite markers at any stage of the derivation (except for the definite marker in the possessor, whose distribution is always as expected within the possessor DP). To be more concrete, at least one among these many solutions can be implemented straightforwardly in Amharic: a different kind of D occurs with possessors, like the English Saxon genitive 's or Ritter's (1991) D_{gen(tive)} in Hebrew. This D would be phonologically null in Amharic, and in complementary distribution with the D[DEF] that is realized as the definite marker.⁹

⁷ 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. For present purposes, I simply assume that *yä-* is a relational preposition when attached to possessors, and a complementizer when attached to relative clauses (see 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).

⁸ Lack of definite-marking in possessive DPs is often associated with (in)definiteness spreading where the (in)definiteness of the possessor affects the definiteness of the DP within which it is embedded (see e.g. Barker 2000 on English, Borer 1999 and many others on Hebrew). It is still under investigation whether this occurs in Amharic. den Dikken (2007) argues that definite possessors do not trigger a definite interpretation of the entire possessive DP, but many grammars note the opposite effect (i.e., a definite possessor indicates a definite interpretation of the whole DP, see e.g., Hartmann 1980:306, Leslau 1995:193).

⁹ There is one circumstance under which a definite marker can surface in an Amharic possessive DP. If an adjective modifies the possessum, the adjective can have an optional definite marker.

- (i) yä-Girma tɨllɨk'(-u) bet
 of-Girma big(-DEF) house
 Girma's big house

Whichever way the lack of definite marking is ultimately analyzed, the fact that possessive DPs probably do not contain definite markers at any stage of the derivation renders them significantly less germane to present concerns, and they will not be treated further.

Taking a wide view of all the data seen in this section, certain generalizations emerge. First, the definite marker cannot attach to a nominal stem when the stem is preceded by other material.¹⁰ Instead, the definite marker attaches to the right edge of the 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. These generalizations form the empirical base for the analysis to come. Before presenting the analysis, though, it is necessary to discuss how previous research has dealt with the Amharic definite marker.

3 PREVIOUS ACCOUNTS AND POSSIBLE ANALYSES

Ever since the DP hypothesis was proposed (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], perhaps generated through some kind of definiteness agreement with (abstract) D, and 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].¹¹ In the former kind of account, phrasal movement in the syntax accounts for the ordering of D (see e.g., Halefom 1994, Ouhalla 2004). In the [DEF]-based accounts, two main strategies have been pursued. Either there is an AgrDef projection in the syntax (Demeke 2001, following Fassi Fehri's 1999 account of Arabic definite marking¹²) or there is a syntactic checking/Agree relationship between the host of the definite marker and an abstract D (den Dikken 2007).¹³ In Section 3.1, I argue that neither of these kinds of analyses can account for all the data presented above, examining in particular the accounts in Ouhalla 2004 and den Dikken 2007. In Section 3.2, I outline my own analysis, which solves the problems 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.

Previewing the analysis to come, I claim that all optional definite markers are instances of definiteness agreement between a D that has a definiteness feature and an adjective. Therefore, as long as the D_{gen} has a [DEF] feature, it is predicted to license definiteness agreement (even if that feature was perhaps acquired from the possessor itself; note also that for the syntactic analysis to work here one must assume that D_{gen} is a separate lexical item always spelled out as null despite the definiteness feature). This predicts that when the adjective is marked for definiteness, the whole DP is interpreted as definite, and see den Dikken 2007 for some support for this. Since a detailed analysis of this data will depend on whether or not there is (in)definiteness spreading in Amharic, I leave it for future work.

¹⁰ Note that 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.” However, see Section 5 for some discussion of additional data from free relatives, numerals and compounds.

¹¹ Pre-DP analyses of definite marking are rule-based and treat less data (see e.g., Bach 1970, Mullen 1986).

¹² Several other Semitic languages have complex definite marking patterns; see Section 6.4 for discussion.

¹³ In work that became available as this paper was being revised, Beermann and Ephrem (2007) briefly develop an HPSG, feature-based account of Amharic definite marking. Following Wintner 2000, they propose a lexical rule that adds a definiteness feature to adjectives and nouns. An adjective then selects for a noun that is not definite-marked. It is unclear to me whether this approach can cover all the data mentioned here, especially DPs with multiple adjectives and relative clauses. Cf. Dost and Gribanova 2006 on Bulgarian.

3.1 D versus [DEF]

Both Ouhalla 2004 and den Dikken 2007 are primarily focused on accounting for Amharic relative clauses and possessors, with definite marking being an issue that is closely related but not central. Nevertheless, it is worth investigating whether their accounts of definite marking could be extended to cover all the data here. In Ouhalla 2004, an account of Semitic relative clauses is developed; relative clauses are merged in Spec, NumP, and are DPs where the D head takes a TP complement. To account for the placement of the definite marker in Amharic relative clauses, the TP within the relative clause raises to Spec,DP.

$$(18) \quad [{}_{DP} D [{}_{NumP} [{}_{DPREL} TP_i [D' D t_i]] [{}_{Num'} Num [NP]]]]$$

This works for the relative clause data, but it is unclear how it would extend to the adjective data presented above, especially when the definite marker appears optionally on multiple adjectives.¹⁴ In Halefom's (1994) approach, which is broadly similar to Ouhalla's, it is suggested that multiple instances of the definite marker are coordinated DPs. This seems unlikely, though, since adjectives can be either listed without a conjunction (the big black house) or conjoined with an overt conjunction (the big and black house), and the definiteness marking patterns are different for each (see Section 4.2). I conclude that these accounts cannot cover the optional definite-marking data, at least not without assuming some additional mechanism of (perhaps) definiteness agreement.

In den Dikken 2007, just such a mechanism is proposed to account for all the instances of the definite marker. Den Dikken analyzes the definite marker as merging with its host in the lexicon, and checking its definiteness features against a phonologically null D[DEF]. He essentially 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.

As a first step, I assume that [DEF] can appear as an uninterpretable feature on adjectives. Since it is uninterpretable, the [μ DEF] on an adjective must be valued, and since D[DEF] is (perhaps) the only element that can value this feature, D[DEF] and Adj[μ DEF] must enter into an Agree relationship. The key properties of the Agree relationship are listed in (19). I assume that Agree can relate features like [DEF] even though it typically relates phi-features and case features.

- (19) **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 (19) will not hold between Adj[μ DEF] and D[DEF]. Given their feature make-up, Adj should be the probe and D should be the goal, but Adj does not command D, and there is no independent justification for D having uninterpretable features (i.e., being active) as well. However, the properties in (19) comprise essentially the strongest, most

¹⁴ There is a strand of work on adjective syntax where all or some adjectives are reduced relative clauses (see e.g., Kayne 1994, Alexiadou and Wilder 1998, Alexiadou 2001). This could provide a straightforward way to apply Ouhalla's analysis to adjectives. However, this analysis of relative clauses is substantially different from Ouhalla's assumptions, and also has been independently argued to be untenable for Amharic (Demeke 2001).

restricted version of Agree. It is possible that one or more should be relaxed (in certain cases or in general), and much research explores exactly this issue (see e.g., Richards 2004 which relaxes (19)b, Carstens 2000 which relaxes (19)e)). I therefore adjust Agree in the following way: assume that a head X with interpretable feature [F] which commands a head Y with uninterpretable feature [μ F] can enter into an Agree relationship with Y and value Y's [μ F]. In Amharic, then, the head D[DEF] which commands the head Adj [μ DEF] can enter into an Agree relationship with Adj and value its [DEF]. The valued [DEF] feature on Adj is spelled out as the definite marker post-syntactically. D[DEF] is always spelled out as a null morpheme.

This account, however, still leads to several problems. To account for multiple instances of the definite marker, assume that Multiple Agree (Hiraiwa 2001) is allowed, and can be configured so that there are multiple Agree relations between D[DEF] and any following Adj[μ DEF]. However, it is unclear how the definite marker could ever be optional. If an adjective is merged from the lexicon with a [μ DEF] feature, that feature must be checked in order for the derivation to converge.

Also, under this analysis, N must have a [μ 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.¹⁵

Moreover, consider the relative clause data. There would have to be [μ DEF] features on verbs 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). For all of these reasons, then, I conclude that there are serious obstacles to constructing an account that relies only on the definite marker being realized as a definiteness feature.

3.2 Combined Analysis

The analysis of the Amharic definite marker which will be developed in the rest of the paper 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 makes the analysis more complex, but 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 as close to the edge as possible 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 first 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. To explain optional definite-marking on adjectives, I propose there is **optional definiteness agreement on APs**, where the [DEF] feature is realized as the definite marker. The analysis is supported by the fact that other DP-internal agreement processes (e.g.,

¹⁵ Both of these problems can be avoided if [μ DEF] is optional on nouns and adjectives (see Adger and Smith 2006), but this leads to a false prediction. Consider a definite DP containing only D and N where D has [DEF] but N does not (since the [μ DEF] feature is optional). Since the definite marker is the reflex of a [DEF] feature on N or A, there would be no definite marker in this DP. Therefore, this account predicts that bare nouns should be able to be interpreted like definite DPs, which is incorrect, e.g., *tāmari* can mean ‘student’ or ‘students’ (bare indefinites are number-neutral) but never ‘the student.’

number agreement) are optional as well. These ideas are fleshed out in the remainder of the paper. In Sections 4 and 5, the 2P clitic analysis is presented and supported, and the definiteness agreement analysis is presented in Section 6.

4 THE ANALYSIS OF DEFINITE MARKING : SECOND POSITION

Before beginning this section, 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 (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 rather complex, and other uncontroversially D elements are not forthcoming. In the analysis, 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

There has been a sustained interest in second position (2P) clitics from a generative perspective since the early 1980s, with the broadest perspectives found in work by Klavans (1980 et seq.), Miller (1992a), Halpern (1995), Anderson (2005), and a collection 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 morphological operations occur. These assumptions are represented in Figure 1.

Figure 1 (see end of paper)

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

Figure 2 (see end of paper)

Directly after the PF/LF Branching, hierarchical structure persists and morphological operations like Lowering, Fission, and Fusion 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 2003) 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: syntax, pre-linearization morphology, post-linearization morphology, 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 and others). 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 analysis in Ouhalla 2004 (discussed in Section 3.1), while it is not couched in these terms, is essentially this kind of analysis. I do not construct such an account here because of what I consider 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 in order 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 2P cliticization occurs in order to provide a morphophonological host for a clitic that cannot find a host in its base position. I thus continue by considering phonological and morphological accounts.

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 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. 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 in-between 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 in DP (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).

However, there is an empirical reason to consider a prosodic account less than ideal -- it cannot account for coordinated structures. When two constituents that would be definite-marked are coordinated, definite marking is required on both conjuncts (see Miller 1992b for discussion of similar phenomena in other languages).

(20) Coordinated APs

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

(21) Coordinated CPs

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

(22) Coordinated NPs

däbtär-u {inna / wäyimm} iskrībto-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 (23)), the weak pronoun attaches only to the first conjunct (Chung 2003: 594-596), thus choosing the first option of the two described above.

- (23) [Infitmera-n Rosa]_{DP} **yu'** yan [doktu-n Julia]_{DP}
 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 that it cannot predict the coordination data, and 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 2003, 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.

- (24)
$$\begin{array}{c} [XP \ X \ [YP \ Y \ ZP]] \\ \quad \quad \quad \uparrow \\ \quad \quad \quad \text{Lowering} \end{array}$$

Since Lowering “skips” intervening adjuncts and specifiers, 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, attaching to the right of the noun if the noun is alone in the DP, or to the right edge of an AP (see Dost and Gribanova 2006 for detailed data). In their analysis, Embick and Noyer (2001:568) crucially assume that the adjective is part of the extended projection of NP, as in (25).

- (25)
$$[DP \ D \ [AP \ A \ [NP \ N]]]$$

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 (25), 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 are several empirical reasons not to accept the structure in (25). Dost and Gribanova (2006) and Hankamer and Mikkelsen (2005) point out that the motivation for Abney's (1987) original structure was that adjectives do not take complements in English. However, they do in Bulgarian (Dost and Gribanova 2006:135) and they do in Amharic as well (see (6)), so not only will an AP somehow have to take two complements (or have one ‘complement’ be a specifier), but also there is no motivation for (25) in Amharic independent of present concerns. Finally, it is possible in Amharic for an AP to be fronted to a DP-initial position for focus, as described in Demeke 2001 (211ff.), and den Dikken 2007 (fn. 14). In (25), 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 in Amharic.

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 (26). The star * represents an immediate precedence relation.

$$(26) \quad X * Y \rightarrow Y-X \quad [\text{or}] \quad X-Y$$

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.

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.^{16,17} 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 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.

$$(27) \quad \begin{array}{ccc} \text{DP} & (\text{Spell-Out and Linearization}) & [-u * \text{bet}] \\ \swarrow \quad \searrow & \Rightarrow & \\ \text{D} \quad \text{NP} & & \\ -u \quad \triangle & & \\ & & \text{bet} \end{array}$$

In the linearized string to the right of the arrow in (27), 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 (28).

¹⁶ 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 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 Kennedy 1997 on DegP) should also be a phase since it is the extended projection of the lexical head A.

¹⁷ 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 μ 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 few or no instances of D undergoing head-raising to a position outside the DP. However, it must be noted that determiners in Kwakwaka'ala may indicate that even having the head of DP be part of the spell-out domain may be a language-particular choice. In Kwakwaka'ala, determiners 'lean' leftwards and attach phonologically to the word that immediately precedes the nominal they are associated with (see Anderson 2005).

- (28) 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 Locally Dislocate to right-adjoin to the nominal *bet* “house.”

- (29) $[-u * bet] \rightarrow [bet-u]$

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 string-vacuously Locally Dislocate. 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.

(30) **Phase Impenetrability Condition**

In a phase α , the spell-out domain of α is not accessible to operations outside α -- only the edge of α 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 α which contains a distinct spell-out domain β . β is impenetrable in the sense that morphological operations that occur during the Spell-Out of α (Lowering, Local Dislocation, Fission, Fusion, etc.) cannot target any morphemes internal to β , and cannot move any morphemes into β . In other words, the morphological operations cannot alter β either by removing or adding morphemes to it, or by changing the relationships between the morphemes internal to it. Essentially, β is inaccessible to morphological operations that happen during the Spell-Out of α .

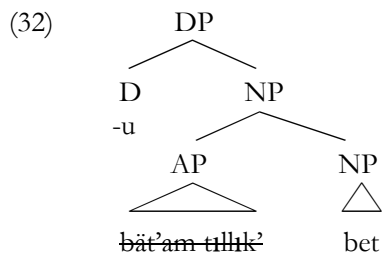
However, there is a crucial exception to this. The edge of β is still available, where the edge material is usually defined as any specifier of β . However, none of the relevant phases (CP, AP) have specifiers that are morphophonologically realized in Amharic.¹⁸ Instead, I propose that the edge of β can be interpreted more literally, in the following sense. The PIC has the effect that β 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 β 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 β and the material surrounding it has not yet been set. In other words, all the β -internal material has been spelled out, but the linearization of β as a

¹⁸ Spec,CP is filled by a null operator, and topicalization within relative clauses (presumably to an additional specifier position) is not allowed in Amharic. As for AP, measure phrases have been commonly analyzed as in the specifier position of AP (more specifically, DegP; see e.g., Kennedy 1997) but in Amharic, measure phrases with a following adjective are ungrammatical. For details on the data, see Kramer 2008.

whole with respect to the material in α is still open. Morphological operations at α can thus move a morpheme to the edge of β without any disruption of previously-set relationships. In effect, then, β 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 (31) where (roughly) DP is the spell-out domain α that contains another spell-out domain β (roughly AP).

- (31) *bät'am tlllk'-u bet*
 very big-DEF house
 the very big house



The linearized string in (33) is a representation of (31) after the DP spell-out domain has been linearized and vocabulary has been inserted. Spelled-out material is struck-through.¹⁹

- (33) [-u * [~~bät'am tlllk'~~] * 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 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 (33), since the AP is the closest “head” to the definite marker in terms of precedence, the definite marker simply Locally Dislocates with it and adjoins to its right edge.

- (34) [~~bät'am tlllk'~~-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 Locally Dislocating with the spell-out domain of the relative clause CP. As for the multiple adjective data, 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 (35) thus as in (36), with the phase/domain boundaries indicated by brackets.

¹⁹ 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. Abney (1987) cites 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.

(35) ɬllɪk'-u t'ɪk'ur(-u) bet
 big-DEF black(-DEF) house
 the big black house

(36) [-u * [ɬllɪk'] * [t'ɪk'ur] * bet]

The leftmost adjective is the element that the definite marker immediately precedes, so that is what it Locally 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.²⁰ Local Dislocation applies cyclically by spell-out domain, and a previously spelled-out domain is impenetrable, i.e. a closed cycle.

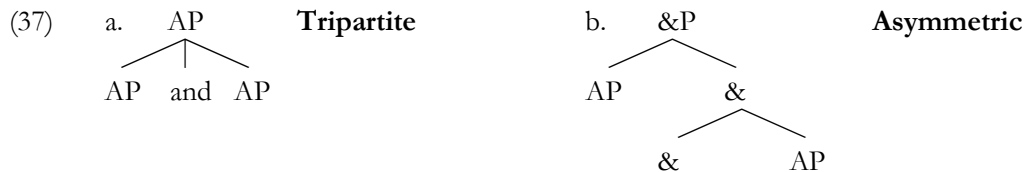
4.5 2P in the Morphology: Further Details

In this section, I discuss some additional aspects of the analysis developed above. In Section 4.5.1, I return to the coordination data that was introduced in Section 4.2, which initially seems problematic but can be plausibly accounted for. In Section 4.5.2, I discuss how the conclusions in Embick 2003 and Heck, Müller and Trommer 2008, both of which involve cyclicity at the syntax-morphology interface, are related to the present analysis.

4.5.1 Coordination

In Section 4.2, data was presented on conjoined APs, CPs and NPs that are definite-marked (see (20) - (22)). 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 (37)a and (37)b respectively), incorrect predictions are made depending on the phase-hood of the 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.



²⁰ A reviewer suggests an alternative analysis whereby the Local Dislocation rule can only ‘see’ complete modifiers (i.e., it cannot operate on the internal components of modifiers). The complete modifier analysis and the phase-based analysis can be distinguished via data from numerals, discussed more fully in Section 5. The definite marker always attaches to the right edge of even very complex numerals, which, under the complete modifier analysis, either forces all numerals to be modifiers (against current analyses of numeral syntax) or requires an additional, seemingly random stipulation that Local Dislocation only sees complete numerals. In contrast, as detailed in Section 5, the phase-based analysis is capable of generating the numeral facts without additional stipulation, and it is compatible with many recent accounts of numeral syntax. Also, the phase-based analysis is analytically preferable to the complete modifier analysis since it provides an independently-motivated reason for why certain categories are treated as ‘complete’ by Local Dislocation.

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.

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 (38)a contains two component sentences, which are in (38)b.

- (38) 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 (38)b, crucially assuming that non-terminal nodes which dominate the same terminals are not distinct. Thus, there is essentially only one DP node 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 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 (2003) 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 the hierarchical relations and relates members of a category to a phrase, 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 (2003), I assume that Local Dislocation occurs 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 (39).

- (39) [-u * $\left\{ \begin{array}{l} t\text{llik}' \\ t'\text{ik}'\text{ur} \end{array} \right\} * \text{bet}]$

The definite marker precedes both the adjectives, and the noun *bet* “house” follows them, but the adjectives *tllik'* “big” and *t'ik'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 (Ross 1967) that blocks movement into (as well as out of) a single conjunct (see also Hankamer 2008 where it is argued that dissociated morphemes must be inserted in all conjuncts of a coordinated structure.) Alternatively, Local Dislocation could be reformulated such that if two elements are equidistant in terms of precedence from the definite marker, the definite marker must dislocate with both.²¹ Regardless, it is now possible to generate the double definiteness marking seen on conjuncts, while maintaining the analysis developed above.²²

In (39), 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 2003; see also Marantz 1988). It undergoes Local Dislocation to attach to the first head of the second conjunct.

(40) *diu noctu-que* ‘by day and by night’ (Embick 2003: (6))

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 not incompatible with theories about the syntax of coordination (especially a theory that endorses &P). Also, 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.²³

To return to Amharic, 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 the conjunct). Overall, then, the Amharic coordination data can be accounted for with a Local Dislocation analysis using Goodall’s (1987) approach to coordination, and by assuming (supported by evidence from *-que*), that a conjunction is contained within the second conjunct of a coordinated structure.

²¹ Ideally, this could be made to follow from a general principle about how all post-linearization operations treat elements that are equidistant in precedence.

²² 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, the DP. This provides evidence that “phase” and “spell-out domain” are really separate objects, which has not been necessary to assume previously.

²³ There is a second way in which the Local Dislocation of *-que* may not 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, so it remains to be seen whether this prediction is borne out.

4.5.2 Embick 2003 and Heck, Müller and Trommer 2008

In Embick 2003, it is suggested that PF operations apply cyclically, although there is no discussion of phase impenetrability per se. In this section, I begin by examining Embick's (2003) analysis of French prepositions and determiners and show how it fits with the assumptions about phase impenetrability argued for here.

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

- (41) a. du chat (*de le chat)
 b. de l'arbre (*du arbre) (Embick 2003: (38a), (40))

Embick proposes that (41)a is an instance of Lowering from P-to-D, whereas in (41)b the determiner undergoes (string-vacuous) Local Dislocation to attach to the noun (but see Teeple 2007 for a different perspective). However, Lowering precedes Local Dislocation, so it may seem as if D can never attach to a vowel-initial word (P will always lower to D first). If PF operations apply cyclically, though, 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 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 (2003) suggests that vocabulary is not inserted at D during its initial spell-out. Combining these ideas, 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 2003 about cyclicity with respect to French can be maintained in the current analysis of phase impenetrability.

Another phase-based analysis deserves comment here: the analysis of Scandinavian definite marking in Heck, Müller and Trommer 2008 (henceforth, HM&T). The analysis is built on the assumption that DP is a phase and N is associated with a [DEF] feature. HM&T propose that, in order to be accessible later in the derivation, [DEF] must move to the edge of the DP. Specifically, they propose that [DEF] moves to D when there is a prenominal AP, with the higher and lower copies of [DEF] spelled out in Swedish (*den gamle best-en* 'the old horse-DEF') but just the higher copy in Danish (*den gamle best* 'the old horse').

The account is attractive in its appeal to phases, but it is not easily applicable to Amharic. Suppose that [DEF] moves to D in Amharic when there is a prenominal AP. At least one copy of the definite marker should then precede the AP, like *den* does in Swedish and Danish. However, as shown above, the definite marker always follows the AP in Amharic.²⁴ One could say the definite marker undergoes Local Dislocation with the AP, but then the HM&T analysis would essentially reduce to the analysis here. Another option could be that the [DEF] feature moves to right-adjoin directly to the AP. However, this is not a valid movement for features under the classical formulation of feature movement in Chomsky 1995, and even if it were licit, it is unclear why this would be licensed in Amharic but not Scandinavian, where definite markers are similarly enclitic. In sum, then, the conclusions reached in the HM&T analysis about definite marking are not useful for the Amharic data, despite the similar reliance on phases.²⁵

²⁴ It cannot be that only the lowest copy of [DEF] is spelled out (i.e., [DEF] on N) since this would predict that the noun would have the definite marker and not the adjective.

²⁵ An anonymous reviewer proposes a variation on HM&T 2008 (referred to below as 'the variation') that can generate the Amharic facts. Assume that a definiteness feature [DEF] is generated as part of N (N+DEF) and [DEF] must always be visible at the left edge of a nominal constituent. This results in multiple copies of [DEF]

Overall, in this section, it has been demonstrated that the definite marker attaches to a host via the morphological operation Local Dislocation. 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.

5 EXTENDING THE ANALYSIS: ADDITIONAL EVIDENCE FOR LOCAL DISLOCATION

The discussion so far has focused 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: free relatives, nominal compounds, and numerals. I show that the placement of the definite marker in all cases can be accounted for under a Local Dislocation analysis of definite marking.

within the DP, and a set of ordered rules determine which copies are spelled out. The relevant representations (along with how they are spelled out) and the spell-out rules (along with what effect they have) are below.

- (ii) a. [DEF N+DEF] = bet-u = ‘the house’
 b. [DEF AP [DEF N+DEF]] = tɨllɨk’-u bet = ‘the big house’
 c. [DEF AP [DEF AP [DEF N+DEF]]] = tɨllɨk’-u t’ɨk’ur(-u) bet = ‘the big black house’
- I. Delete copies of DEF without an appropriate host (e.g., leftmost DEF in (iabc)).
 - II. Spell out the highest copy of DEF (the newly highest copy, e.g., N+DEF in iia, AP [DEF in iib)).
 - III. Delete the lowest copy of DEF (e.g., N+DEF in iib).
 - IV. Spell out all (remaining) copies of DEF (e.g., DEF that is third from left in iic).

The variation generates the basic facts, but it is unclear how it could extend to some of the more complicated definite marking patterns that the Local Dislocation analysis can easily cover (e.g. compounds as described in Section 5 -- would each N have [DEF]? If so, the wrong predictions are made). Regardless of how the empirical facts play out, though, the variation has some serious conceptual problems. The variation discards the central insight of HM&T 2008 that [DEF] must move to the edge domain of a phase in order to be visible to higher probes. In the variation, it must be stipulated that [DEF] always moves to be at the left edge of the structure, regardless of phases or edge domains, and this undermines the theoretical plausibility of the feature movement. It is also unclear where [DEF] is moving to -- probably not to D, but if it is not moving to a head, this (again) goes against the classical formulation of feature movement as head-adjunction (Chomsky 1995).

The variation also requires a new analysis of the Scandinavian definite marking facts treated in HM&T 2008, which leads to some unwelcome consequences. First, it must be stipulated that, in Scandinavian, [DEF] does not undergo feature movement from an [N+DEF] structure, unlike in Amharic (see iia, and also unlike in HM&T 2008 where this comes for free as a result of [N+DEF] being in the edge domain of the DP phase). Also, in Amharic, Rule I prevents [DEF] from being realized when it lacks a host, i.e., it encodes the fact that the definite marker is a suffix. In Scandinavian, though, the reviewer claims that Rule I prevents [DEF] from being realized when its host would be an adjective. These are two distinct morphological problems that should be treated separately: whether [DEF] has a host at all, and whether the morphophonological inventory of the language allows for a realization of [DEF] in the context of a particular host. Even HM&T 2008 does not easily account for all the Scandinavian data, requiring that *-ende* nouns in Danish and Swedish are participles (despite evidence in Hankamer and Mikkelsen 2002 to the contrary; see discussion in HM&T 2008:230), and requiring that restrictive relative clauses are merged as sisters to N in Scandinavian, which is otherwise unmotivated (HM&T 2008:230). It thus cannot be taken as a benefit of HM&T 2008 or the variation that they can easily account for both Amharic and Scandinavian definite marking.

Overall, it seems a feature movement analysis of Amharic definite marking must either be motivated in terms of phases and not easily able to account for the data (HM&T 2008; see discussion in the text) or capable of generating the data but requiring some fundamental stipulations (the variation).

5.1 Free Relatives

Amharic free relatives (discussed in Leslau 1995:93-95, Kapeliuk 1988:93-95) have the external distribution of DPs, and 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-*, and, crucially, they can take the definite marker. An example is in (42).

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

In (42), the free relative *izzih yämät't'aw* ‘the one who came here’ is indistinguishable from the comparable headed relative (*izzih yämät't'aw säw* ‘the person who came here’) except of course for the lack of head.²⁶

The definite marker always attaches to the right edge of a free relative. It cannot attach to any free relative-internal material, as in (43).

- (43) * **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 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.

A central question for syntactic research on free relatives is whether free relatives are DPs (like headed free relatives without the head, more or less) or CPs (more like interrogatives). Amharic free relatives seem more 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 the definite marker. I will thus discuss DP accounts first, but it is important to note that the primary goal of the section is not to develop a particular analysis of Amharic free relatives. The aim is just 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 of definite marking.

Under one version of the DP analysis of relative clauses, free relatives are structurally identical to headed relatives but the head of the relative clause is a null category of some kind (see e.g., Groos and van Riemsdijk 1981, Grosu 1994, et al.). Applying this kind of analysis to the Amharic data yields (44).

- (44) [DP -u [NP [CP izzih yämät't'a] [NP null]]]

If the Local Dislocation analysis of the definite marker is assumed, the position of the definite marker is correctly predicted. (44) is linearized as in (45), and then the definite marker undergoes Local Dislocation with the CP.²⁷

²⁶ Some Amharic free relatives do not take a definite marker (see e.g., Leslau 1995:93). However, these are probably best analyzed as ‘existential’ free relatives (Caponigro 2003: Ch.3) which never refer to maximal entities and appear as complements of certain existential and modal predicates.

²⁷ There is a different version of the DP analysis where the ‘head’ of the free relative is a *wh*-phrase which is either merged or moved to a position outside the free relative (see e.g., Grimshaw 1977, Citko 2002 and many others). Since Amharic relative clauses lack *wh*-phrases, it may be that a null operator would merge or be

(45) [-u * [ɪzzih yämät't'a]] → [ɪzzih yämät't'a-w]

It is more difficult to straightforwardly adapt analyses where free relatives are CPs to the Amharic data (see e.g., Izvorski 2000, Caponigro 2002 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 ('e' in (46), and is licensed by the wh-phrase moving to Spec,DP.

(46) [DP wh-XP_i [D' e [CP ... t_i ...]]]

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 analysis of free relatives.

To sum up this subsection, no matter how the syntax is worked out, the correct position of definite marker is predicted. 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.

5.2 Compounds

Nominal (noun-noun) compounds are very common in Amharic (see e.g., Leslau 1995:247-250, Hartmann 1980:310-315). Some examples are in (47).

(47) a. **ṭmhirt** bet b. bunna näggade c. mäs'haf s'afi
 learning house coffee merchant book writer
 school coffee merchant author

All of the compounds I examine here are endocentric and right-headed.²⁸ 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 only be interpreted as modifying the second member of the compound.

(48) a. *bunna rädʒdʒim näggade b. rädʒdʒim bunna näggade
 coffee tall merchant a tall coffee merchant

(49) a. *mäs'haf rädʒdʒim s'afi b. rädʒdʒim mäs'haf s'afi
 book tall writer a tall author

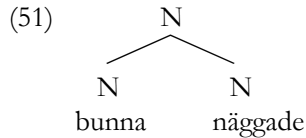
Also, the plural suffix and the accusative case suffix attach only to the second member of the compound, as if the compound were a single N head. Examples with the plural suffix are in (50).

moved to a position external to the free relative. The resulting linearization would be essentially the same as (45) so the definite marker would again be correctly predicted to attach to the right edge of the CP.

²⁸ Note that (47)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.

- (50) a. $\text{t}\bar{\text{m}}\text{h}\bar{\text{r}}\text{t}\ \text{bet-ot}\{\text{t}\}$ 'schools'
 b. $\text{bunna}\ \text{n}\bar{\text{a}}\text{g}\bar{\text{g}}\text{ade-wot}\{\text{t}\}$ 'coffee merchants'
 c. $\text{m}\bar{\text{a}}\text{s}'\text{haf}\ \text{s}'\text{afi-wot}\{\text{t}\}$ '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).



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.²⁹

Definite markers attach only to the second member of a compound.

- (52) a. $\text{t}\bar{\text{m}}\text{h}\bar{\text{r}}\text{t}\ \text{bet-u}$ 'the school'
 b. $\text{bunna}\ \text{n}\bar{\text{a}}\text{g}\bar{\text{g}}\text{ade-w}$ 'the coffee merchant'
 c. $\text{m}\bar{\text{a}}\text{s}'\text{haf}\ \text{s}'\text{afi-w}$ 'the author'

Under a Local Dislocation analysis of definite marking, this is easily accounted for given the Typing Assumption on Local Dislocation (Embick and Noyer 2001, Embick 2003). In Embick and Noyer 2001 and Embick 2003, two types of morphological objects are distinguished: morphosyntactic words (M-words) and subwords (S-words). The definitions of these objects are below.

- (53) 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)

In (51), the topmost N node is a M-word, whereas each lower N node is a S-word (see also Harley 2008 for a Distributed Morphology account of compounding that also analyzes compounds as M-words). 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. The crucial point here is that the definite marker is an M-word; it is a D head not dominated by further head-projection. Therefore, it must dislocate with M-words, and in this case, with an entire compound.

- (54) $[-u * [\text{bunna}\ \text{n}\bar{\text{a}}\text{g}\bar{\text{g}}\text{ade}]] \rightarrow [\text{bunna}\ \text{n}\bar{\text{a}}\text{g}\bar{\text{g}}\text{ade-w}]$

If it were to dislocate with the first member of the compound, it would go against the Typing Assumption since it would dislocate with an S-word. 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.

²⁹ 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 occurs in the lexicon or in the syntax. There is no lexicon in Distributed Morphology, and Harley (2008) has developed a Distributed Morphology account of compounding where it is syntactic incorporation. Her account works for the Amharic data (see below), but it is worth noting that it does not alter the conclusions here at all if the adjunction were to take place in the lexicon.

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). 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 (see Leslau 1995:251-265 and Kapeliuk 1994:78-81).

- (55) a. *sost tämari-wotʃtʃ* b. *amsa siddist tämari-wotʃtʃ*
 three student-PL fifty six student-PL
 three students fifty six students

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

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

The same pattern holds for higher, internally complex numerals, both additive and multiplicative.

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

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

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

In (59), it is ungrammatical for the definite marker to be attached to any other element besides ‘thousand.’³⁰

The pattern of definite marking with numerals is very familiar: the definite marker often appears to ‘skip over’ large amounts of linguistic material to attach to the right edge of a constituent.³¹ 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. Whether either of these options are plausible depends on what is assumed about the syntax of numerals.

³⁰ One may notice that higher numerals tend to be marked for plural agreement (i.e., have the suffix *-otʃtʃ*). I do not attempt to derive this here, especially because the generalization has yet to be confirmed. Leslau (1995:258) notes only that the numeral may take a plural marker but does not say under what conditions.

³¹ The pattern here is also reminiscent of Hebrew numerals, which may precede definite markers (e.g. *xamišim ha škalim* ‘fifty the shekels’). However, the Amharic and Hebrew patterns probably have different analyses. Danon (1997) demonstrates that the numeral in Hebrew is in the construct state, and Amharic has no construct state (see Section 2). For example, in Hebrew, an adjective may not intervene between the numeral and the noun, but such intervention is standard in Amharic (e.g. *sost-u tatari tämari-wotʃtʃ* ‘three-DEF diligent students’).

Within the syntactic literature, there are three main analyses of numerals: the specifier analysis, the functional head analysis and the nominal/mixed analysis. In the specifier analysis, the numeral is an NP or AP specifier of a NumP or QP projection (see e.g., Jackendoff 1977, Li 1999, Shlonsky 2004, Zabbal 2005).

(60) [DP D [NumP/QP [NP/AP *asra aratt*] [Num'/Q' Num/Q [NP *tāmari-wotf*]]]]

NPs have never been considered to be phases, but I assumed earlier that APs are phases. Given this, the specifier analysis can predict definite marking in numerals only if the numeral is an AP specifier.³² In that case, the definite marker dislocates with the previously-spelled out AP.

(61) [-u * [~~*asra aratt*~~] * *tāmari-wotf*] → [*asra aratt-u* * *tāmari-wotf*]

If the numeral is an NP, though, since it will not have been previously spelled out, it will be accessible to Local Dislocation. The definite marker will then be incorrectly predicted to dislocate with the first head in the NP (i.e. *asra* ‘ten’, which is ungrammatical, see (57)b).

In the functional head analysis, a numeral is a Num/Q (see e.g., Ritter 1991, Zamparelli 2000), and with simple numerals, the definite marking facts are easily accounted for. The definite marker dislocates with the numeral that it immediately precedes.

(62) a. [DP -u [NumP/QP *sost* [NP *tāmari-wotf*]]]
 b. [-u * *sost* * *tāmari-wotf*] → [*sost-u tāmari-wotf*]

For complex numerals, it is slightly more complicated. 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.

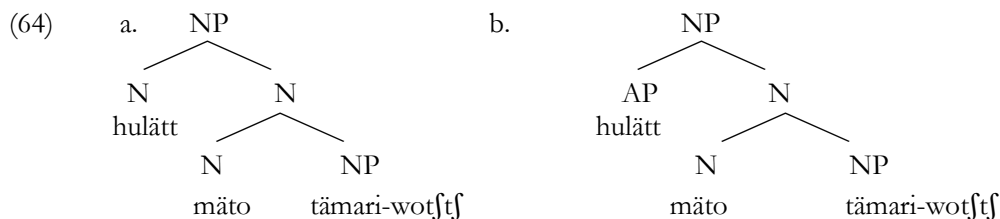
The nominal/mixed analyses take an entirely different approach to numerals, attempting to strike a balance between the adjectival and nominal properties associated with numerals (see e.g., Zweig 2005, Ionin and Matushansky 2005, 2006, henceforth I&M). In I&M 2005, a simple cardinal numeral is a lexical N that takes an NP complement, or an AP specifier of NP (depending on whether simple numerals are adjectival in a given language).

(63) a. [NP [N' *sost* [NP *tāmari-wotf*]]]
 b. [NP [AP *sost*] [N' *tāmari-wotf*]]

Either (63)a or (63)b makes the correct predictions for definite-marking. In (63)a, the definite marker would simply dislocate with the N *sost* ‘three,’ whereas in (63)b it would dislocate with the previously spelled-out AP.

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

³² It is not a trivial question whether numerals are adjectives or nouns. In many languages, numerals display mixed adjectival and nominal properties with lower numerals having more adjectival properties and higher numerals having more nominal properties (Corbett 1978). I leave open the question of how Amharic numerals should be analyzed; note, though, that some analyses discussed later are indeed plausible even if the numerals are analyzed as nouns.



Neither version correctly predicts the definite marking facts. In (64)a, the definite marker would dislocate with the first N since NP is not a phase, resulting in the ungrammatical string **hulätt-u mätö tämariwotʃtʃ* (see (58)b). In (64)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. I&M (2005, 2006) propose additive numerals are (sometimes asyndetically) coordinated NPs where either both instances of the head noun undergo right-node raising, or the leftmost head noun is elided. In Amharic, though, conjoined constituents must both take the definite marker (see Section 4.2), so the following ungrammatical form would be predicted.³³

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

Taking stock, it has been shown that the Local Dislocation analysis of definite-marking is compatible with several analyses of numeral syntax: the specifier analysis, the functional head analysis, and the nominal/mixed analysis of simple numerals. It also distinguishes between the analyses -- the nominal/mixed analysis of complex numerals makes incorrect predictions.

Overall, this section has extended the analysis of definite marking to three new empirical domains: free relatives, compounds and numerals, and in each case, it was found that the Local Dislocation analysis can correctly predict definite-marking given certain independently-proposed and/or plausible analyses of the relevant constructions.

6 THE ANALYSIS OF DEFINITE MARKING : DEFINITENESS AGREEMENT

It was suggested earlier that optional definite markers (i.e., definite markers on non-initial adjectives) are the reflex of definiteness agreement, and in this section, I develop an analysis of this agreement. I begin by motivating the assumption that optional definite marking is in fact definiteness agreement.

In many languages, adjectives and other DP-internal constituents agree with N in terms of phi-features. However, agreement in definiteness is much rarer, found primarily in Amharic and fellow Semitic languages Arabic and Hebrew (see e.g., Borer 1999, Danon 2001, Shlonsky 2004, Pereltsvaig 2006 and Section 6.4 for discussion).³⁴ Definiteness agreement does not involve phi-

³³ It is possible to overtly coordinate numerals in Amharic with the preposition *kä-* ‘with,’ e.g. *asra siddist käbaya ammist* ‘ten six with-twenty five’ = sixteen dollars and twenty five cents. However, these numerals are only used for indicating monetary amounts and telling the time.

³⁴ See also Hughes 2003 on definiteness concord in Swedish. It is also possible to have multiple definite markers within one DP in Modern Greek, but this is not usually analyzed as definiteness agreement. Such DPs are called polydefinites (see Kolliakou 2004, Campos and Stavrou 2004 and references therein).

- (iii) a. i pena i asimenja
 the pen the silver
 the silver pen (Campos and Stavrou 2004:137)
- b. * o ipotithemenos o antagonismos
 the alleged the competition
 the alleged competition (C&S 2004:144)

features, and the definiteness feature does not necessarily originate on the noun. In his cross-linguistic study of agreement, Corbett (2006) even suggests that, in Hebrew, multiple realizations of a definite marker can never be agreement, but instead are the effect of some “mechanism for marking definiteness multiply on the noun phrase” (136).

However, Corbett’s suggestion is colored by his assumption that nominal phrases are NPs in Hebrew. If the DP hypothesis is assumed, optional definite marking in Amharic meets many of Corbett’s criteria for canonical agreement. According to Corbett, in canonical agreement there is always a controller which determines the agreement. The controller should be present and have overt expression of the relevant features. In my analysis of definite marking, the controller (D) is present as obligatory definite marking in most cases when there is optional definite marking, and also overtly expresses the relevant feature (definiteness). The target canonically has a bound morpheme expression of agreement which is regular and productive, which is true in Amharic. Granted, optional definite marking is optional and does not repeat on all elements within DP, which are non-canonical properties of agreement. However, this does not necessarily render optional definite marking not agreement.

Moreover, nouns, adverbs, and other DP-internal categories never have optional definite marking; adjectives are the only categories that do. Although choosing which elements participate in agreement is a standard example of arbitrary language variation, certain categories are more common than others. In DP-internal agreement, the most frequent category to participate is adjectives (Corbett 2006:40, see also Anderson 1992:106), exactly the category that is marked in Amharic optional definite marking. Optional definite marking thus acts in line with cross-linguistic tendencies for DP-internal agreement.

There are also some Amharic-internal reasons to consider optional definite marking agreement. To start, at least some other kinds of DP-internal agreement are optional. For example, adjectives optionally agree in number with indefinite nominals, and case concord is optional on non-initial adjectives.

- (66) a. tɨgu(-wotʃtʃ) tāmari-wotʃtʃ b. tɨllik’-u-n t’ɨk’ur(-u-n) bet
 diligent(-PL) student-PL big-DEF-ACC black(-DEF-ACC) house
 diligent students the big black house (accusative)

Additional evidence that definiteness agreement is treated like DP-internal agreement comes from the fact that DP-internal agreement in general is being lost in Amharic. Younger and/or more urban speakers often do not have, or have difficulties judging, DPs with number and case concord. In these speakers, optional definite markers are also either ungrammatical or marginal, indicating that optional definite markers behave like other DP-internal agreement processes in terms of language change.

Greek polydefinites are associated with a range of syntactic and semantic effects that are not present in Semitic. For example, non-predicative adjectives are ungrammatical in polydefinites (see iib), but grammatical with Semitic definiteness agreement (e.g., *ba-sar ba-kodem*, the-minister the-former, Shlonsky 2004:1492, fn.30). In Amharic, initial investigation indicates that non-predicative adjectives (e.g. *wanna* ‘chief’, *yāk’ädmo* ‘former’) are allowed with definiteness agreement.

- (iv) a. rädʒdʒim-u wanna(-w) azzaʒ b. rädʒdʒim-u yäk’ädmo(-w) kántiba
 tall-DEF chief(-DEF) commander tall-DEF former(-DEF) mayor
 the tall commander in chief the tall former mayor

Thus, Amharic seems to be like the other Semitic languages, but research is ongoing to investigate all the semantic effects found in Greek polydefinites.

Considering then that optional definite marking meets many of the criteria of canonical agreement, and acts like DP-internal agreement both internally to Amharic and externally in terms of cross-linguistic norms, I conclude optional definite markers are the reflex of definiteness agreement.

6.1 Analysis of Definiteness Agreement

I assume a Distributed Morphology analysis of agreement, where agreement happens post-syntactically before Vocabulary Insertion and Linearization. The first operation is the insertion of an Agr node adjoined to the target of the agreement (i.e., the head on which the agreement features ultimately surface). After the Agr node is inserted, there is a Feature Copying operation that copies the relevant features from the node where they originate into the Agr node.³⁵

In Amharic, I propose that there is an optional rule which inserts an Agr node adjoined to A. The optionality of this rule captures the optionality of agreement.³⁶

- (67) **Agr Insertion** (optional)
 $A \rightarrow [A \text{ Agr}]$

The relevant Feature Copying rule for definiteness agreement is in (68).

- (68) **Feature Copying**
 The [DEF] feature on the closest c-commanding D is copied into the Agr node attached to Adj.

Agr Insertion must occur before Feature Copying (or else an empty Agr node would be in the representation at spell-out), and Feature Copying must not be able to occur if the adjective lacks an Agr node.³⁷ The Agr Insertion rule is straightforward, but Feature Copying has a locality condition, namely, that an adjective can only agree with the closest D to it. Assume the closest D is the particular D (call it D_1) that c-commands the adjective such that there is no other D that c-commands the adjective and is c-commanded by D_1 . This locality condition serves two purposes. First, it prevents an adjective from agreeing with the D internal to any DP complement it may have, or with any D in a preceding relative clause; these D's would not c-command the adjective. Second, it prevents an adjective within an AP complement or a relative clause from agreeing with the main D; it would not be the closest c-commanding D to the adjective.

³⁵ See also Halle and Matushansky 2006 for an account of Russian DP-internal agreement using Agr Insertion and Feature Copying.

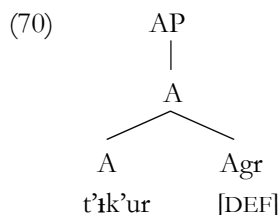
³⁶ A reviewer comments that the rule here does not explain why definiteness agreement is optional. However, by definition, optionality is unexplained variation -- if definite markers appeared on non-initial adjectives under particular conditions, the conditions would be built into the analysis and the extra definite markers would not be optional anymore. To the best of my knowledge, there are no such conditions. The best explanation for optionality in this case may be diachronic -- DP-internal agreement is being lost from Amharic, and a plausible stage of a phenomenon's disappearance from a language is one where it becomes optional. It is worth noting that the optionality would also not be explained under a Minimalist Agree analysis where adjectives optionally have an uninterpretable definiteness feature. The optionality would be in a different part of the grammar, but it would still be unclear why the uninterpretable definiteness feature was optional on adjectives in the first place.

³⁷ The fact that an adjective may participate in phi-feature agreement with the noun (have an Agr node), but not participate in definiteness agreement, seems initially problematic for this necessary assumption. However, definiteness and phi-feature agreement must use separate Agr nodes since they are spelled out as separate morphemes. I assume, then, that there is some way of differentiating the Agr nodes such that definiteness agreement is not accidentally triggered by the presence of an Agr node for phi-feature agreement. This differentiation may be as simple as the ordering of events in the Morphology (phi-feature agreement could precede definiteness agreement, and Feature Copying for D could target only empty Agr nodes).

To illustrate the analysis, consider the example in (69) where the adjective *t'ik'ur* “black” agrees in definiteness with the D.

- (69) *tɪllik'-u t'ik'ur(-u) bet*
 big-DEF black(-DEF) house
 the big black house

In the Morphology, an Agr node is inserted on A, and then the [DEF] feature on D is copied into it.



At Vocabulary Insertion, the [DEF] feature in Agr is spelled out as *-u*, i.e. the definite marker.³⁸

There is an additional wrinkle in the data that needs to be accounted for: the definite marker on adjectives is feminine if the noun is feminine (e.g., *makina* “car”).

- (71) *tɪnnɪʃ-wa k'äyy(-wa) makina*
 small-DEF.F red(-DEF.F) car
 the small red car

Adjectives do not typically agree in gender with N, so it is unlikely that *-wa* represents a fusion of [DEF] features from D and [FEM] features from N that are both in Agr nodes on A. Instead, I suggest that the “definiteness” agreement process targets all the features that comprise D, including the phi-features on D that agree with N. It is clear D must agree with N in terms of phi-features in any case since its realization depends on the gender and number of N, and it is easy to adjust the Feature Copying rule to simply copy all the features on D.

(72) **Feature Copying (Take 2)**

The features on the closest c-commanding D are copied into the Agr node attached to Adj.

The features on the Agr node are then spelled out just like the feature bundle that comprises D, effectively creating a copy of D that is attached to the adjective. This has the benefit of explaining why the same morpheme is inserted in the Agr node as in the D node – it is the same feature bundle.

Before concluding, it is necessary to clarify the consequences of this analysis for the theory of spell-out. Spell-out is often used to refer to the sending of a completed syntactic derivation to the PF branch of the grammar (and I have used it thus previously in the paper). It therefore would occur **before** Agr Insertion and Feature Copying, since these operations occur on the PF branch.

³⁸ A reviewer comments that the analysis as a whole does not explain why definiteness agreement applies only to adjectives - this is merely ensured by the Agr Insertion rule. However, I do not believe that current analyses of agreement must explain why a particular category is singled out for agreement. For example, in Minimalism, it is simply assumed that certain heads have certain features in the lexicon (e.g., T has uninterpretable phi features) but this only ensures that T participates in agreement and does not explain **why** T has those features to begin with. It is true that there are cross-linguistic tendencies in terms of what categories are singled out (see Corbett 2006), and future work will hopefully make the connection between typological tendencies and theoretical accounts of agreement explicit. However, for now, I do not believe an agreement analysis must explain why certain categories are targets of agreement.

However, I argued above that the Phase Impenetrability Condition holds post-syntactically, in that morphological operations cannot alter or target the nodes internal to a spell-out domain. Feature-Copying seems to be doing just that -- copying the features of a node that belongs to a higher spell-out domain (D) into a more embedded spell-out domain (the AP).³⁹

However, this problem is averted if “spell-out” is understood more strictly to mean the dual processes of Vocabulary Insertion and Linearization. This is when the derivation truly becomes a serially ordered sequence of lexical items and, eventually, phonological information. In Distributed Morphology, Agr Insertion and Feature Copying occur before Vocabulary Insertion/Linearization, i.e. before spell-out, so these processes would not be predicted to respect the Phase Impenetrability Condition. In the conclusion (Section 7), further implications of this idea for the architecture of the grammar are discussed, and I proceed now to discuss some remaining empirical issues.

6.2 The Interaction Between Optional and Obligatory Definite Marking

The current analysis predicts that every adjective is capable of receiving optional definite marking, even leftmost adjectives that have already been “def-marked” by the Local Dislocation of D. For example, consider a DP with only one adjective, which would be spelled out as (73).

(73) [-u * tɪllikʰ-u * bet]

Local Dislocation will attach the initial *-u* to the edge of *tɪllikʰ-u*, resulting in the unattested *tɪllikʰ-u-u*.

This need not be problematic, though, since one of the *-u* markers can be deleted through morphological haplology, a process well-attested in other languages (Stemberger 1980, Menn and MacWhinney 1984, de Lacy 2000, et al.) and elsewhere in Amharic (see below). Morphological haplology is the phenomenon where there are two underlying phonetically identical morphemes, but only one surfaces. The particular kind seen in Amharic is called “coextensive” morphological haplology by de Lacy (1999), and it is when two morphemes only haplologize if both are not part of the lexical stem. Compare (74)a and b.

(74) a. tʰru-w b. * tɪllikʰ-u-w
good-DEF big-DEF-DEF

In (74)a, the adjectival stem has a final *-u*, but the definite marker is not deleted; instead, it surfaces as a glide to avoid hiatus. However, when there are two consecutive definite markers, one must delete.

Coextensive haplology is very common cross-linguistically, occurring in English, Japanese, Russian, Navajo and Turkish, among many others (see the list in Menn and MacWhinney 1984:522-523). In Amharic, it occurs when two underlying instances of the preposition *yä-* “of” attach to the same stem. This occurs when a possessor itself has a possessor.

(75) a. [DP [PP *yä*-bet] mäskot]
 of-house window
 the window of the house

b. [DP [PP *yä*- [DP [PP *yä*-näggade-w] bet]] mäskot] → *yä-näggadew bet mäskot*
 of of-merchant-DEF house window
 the window of the merchant’s house (Leslau 1995:196)

³⁹ Note that this problem is not averted if a syntactic (not post-syntactic) account of agreement is assumed --- the Phase Impenetrability Condition holds in the narrow syntax as well.

In the simple example in (75)a, *window* has the possessor *the house*. *The house* can also take a possessor itself, *the merchant* in (75)b. However, this possessor precedes *house*, intervening between the *yä*- associated with *house* and *house* itself. This possessor (*the merchant*) also begins with *yä*-, which results in two consecutive phonetically identical *yä*- morphemes. Since only one *yä*- surfaces, coextensive haplology must have taken place.

Coextensive haplology has been successfully analyzed using Optimality Theory (see e.g., de Lacy 2000), and it makes sense in the context of the present analysis that haplology is part of the phonological operations. These operations presumably occur after the Morphology is completely finished, i.e. after any operations at Linearization. This would be after Local Dislocation, so the doubling of definite markers does not occur too late in the derivation to be eliminated. Since the elimination of one of the definite markers can be feasibly analyzed as coextensive haplology, I conclude that the prediction of “double definite marking” is not problematic.

6.3 Definite Marking in Demonstratives

There is usually no definite marking in a DP that contains a demonstrative (data repeated in (76)), but if the demonstrative DP contains an adjective, the adjective may optionally have a definite marker (as in (77); see also Julien 2005:113-114 for a similar pattern of facts in Danish).

- (76) a. *ya bet* b. **ya bet-u* c. **ya-w bet*
 that house that house-DEF that-DEF house

- (77) *ya tɨllɨkʔ(-u) bet*
 that big(-DEF) house
 that big house

Under the current analysis, this indicates the adjective is participating in definiteness agreement. Before sketching how the analysis works, though, it is necessary to determine the syntax of demonstratives.

Demonstratives and definite determiners co-occur in a sizable number of languages (e.g., Greek, Javanese, Welsh, Rumanian), and this has led to the proposal that a demonstrative is not a D, but instead is its own type of head Dem which has a separate projection from DP. There are basically two approaches at play in the literature concerning the syntax of DemP: (a) DemPs are specifiers of some functional projection between D and NP (similar to adjectives, under a Cinque (1994) analysis of adjectives) or (b) DemP immediately dominates DP (henceforth the DP-comp approach).

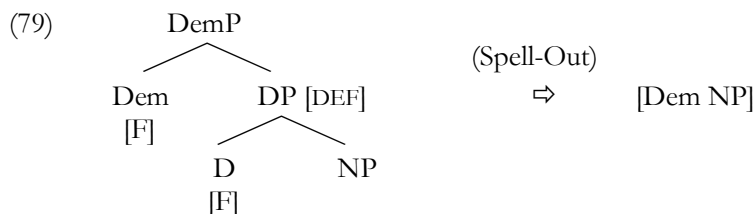
- (78) a. [_{DP} D [_{XP} DemP X [_{NP} N]]] **Dem as Specifier**
 b. [_{DemP} Dem [_{DP} D [_{NP} N]]] **DP-Comp**

The specifier approach is adopted in much of the work on Romance demonstratives (see e.g., Giusti 1997, 2002; Brugè 1996), whereas the DP-comp approach has been developed in recent accounts of demonstratives in Irish (McCloskey 2004) and Scandinavian (Julien 2005; see also Shlonsky (2004) who argues for both kinds of demonstratives in Semitic languages).

Either of these approaches (combined with the analysis of definite marking above) provide a way to understand the demonstrative facts.⁴⁰ Under the DP-comp analysis, the D head of the DP

⁴⁰ Whether or not demonstratives actually are specifiers or heads in Amharic is unclear from preliminary investigation. An adjective and its complement can be realized to the left of a demonstrative, seemingly indicating that demonstratives are not specifiers because an AP can move past them. However, the AP may have been extraposed to some adjoined position for prosodic reasons (it is heavy since it has a complement).

complement of a demonstrative is not spelled out in some languages since it is locally c-commanded by a head (Dem) which contains the same features.



This mechanism can be thought of as a kind of feature unification at spell-out, and it is supported by the fact that it has been independently proposed to apply between two D heads by Bianchi (1999, 2000; albeit for different analytical purposes).

The conditions for feature unification are both met in Amharic: Dem can locally c-command D, and it has a consistent set of features with D. To be more precise about feature consistency, Dem and D must have the same value for any features they have in common in order to be consistent (e.g. both must be [+DEF]), but they are still consistent if they have some different features (e.g., the demonstrative has a semantic deixis feature that the determiner lacks). Julien (2005:112) suggests that the crucial features that must be consistent between Dem and D are number, gender and definiteness, and Amharic demonstratives are consistent in all those features with determiners. The demonstratives agree in number and gender with the head noun (just like D), and render the entire nominal phrase definite, as shown by the fact that demonstrative DPs are marked for accusative case (case-marking is differential with respect to definiteness).

- (80) a. ya bet that.M house b. ya-n bet
 yatʃtʃi set that.F woman that-ACC house
 ɪnnāzziya bet-otʃtʃ those.PL houses that house (acc.)

Hence, when D is spelled out (i.e. at Vocabulary Insertion), no Vocabulary Item is inserted because the features of D are unified with Dem. Thus, D has no phonological representation, and the demonstrative and the definite determiner seem to be in complementary distribution.

This successfully accounts for the lack of obligatory definite marking when there is a demonstrative, and it can also account for the optional definite marking in (77). Even though D is not spelled out, it is still present in the derivation as a separate bundle of features from Dem. This means that before Vocabulary Insertion, the structure of (77) is the same as any structure with a DP preceding an adjective (with the addition of the DemP on top). All of the features of D are present, so they can be copied into the Agr node on an adjective and realized as definiteness agreement.

The specifier analysis of demonstratives is similarly successful in accounting for the facts. In the specifier analysis developed in Giusti 1997, 2002, the demonstrative is inserted as a specifier to a functional projection between D and NP, and it obligatorily raises to Spec,DP (covertly in some languages). This is a plausible overt movement for Amharic since, in the unmarked order, demonstratives precede all other DP-internal elements (adjectives, relative clauses, and possessors).

To account for languages where determiners and demonstratives are in complementary distribution (e.g., Amharic), Giusti posits a ‘doubly-filled DP filter’ such that the specifier and head position of DP cannot both contain overt material. She proposes that the filter can be understood as the interaction of two general principles. The first principle “disallows insertion of an overt element in a functional head unless necessary” (Giusti 2002:70) and the second maintains that a functional projection must be licensed **either** by making the specifier **or** the head “visible.” It is clear

Unfortunately, judgments on fronting an adjective without a complement past a demonstrative vary. Future research will hopefully clarify the issue, but it is not crucial here.

that the first principle is a condition on the insertion of a lexical item, i.e. on Vocabulary Insertion in terms of Distributed Morphology. Hence, in the terms used here, at Vocabulary Insertion for a DP with a demonstrative in Spec,DP, no Vocabulary Item is inserted for D because (as per the second principle) the DP is sufficiently visible since its specifier is filled and (as per the first principle) it is best not to insert material in a functional head position unless necessary.

As for the Amharic data, the two general principles ensure complementary distribution between D and demonstratives. The definiteness agreement in (77) can also be accounted for because before Vocabulary Insertion, the D head is still present and licenses agreement on the adjective. Both the specifier and the DP-comp analyses then can generate the Amharic facts correctly, given that in both cases demonstratives are not D's and D persists in the derivation until Vocabulary Insertion.

No matter what approach is used, the analysis of demonstratives further supports two of the necessary assumptions about how definiteness agreement works. It provides additional evidence that definiteness agreement happens before spell-out, because D is eliminated from the derivation at Vocabulary Insertion under both analyses. Moreover, it is evidence for treating all adjectives as capable of undergoing definiteness agreement. If instead the analysis stated that only non-leftmost adjectives agree, it would be difficult to ever generate agreement on a single adjective following a demonstrative.

6.4 Definiteness Agreement in Semitic

Before concluding this section, it is worth looking briefly at definiteness agreement in Hebrew and Arabic. An example from Hebrew is in (81).

- (81) **ha-bayit ha-gadol**
 DEF-house DEF-big
 the big house

In both Hebrew and Arabic, when the noun has a definite marker, a prefixal/proclitic definite marker must also appear on any associated adjectives.⁴¹ All the definite markers have almost always been analyzed as definiteness agreement, unlike the ‘combined’ account of definite markers developed here where the leftmost definite marker is D and the others are definiteness agreement (although see Ritter 1991 and Shlonsky 2004). Also, there are significant empirical differences between Amharic definiteness agreement and Hebrew/Arabic definiteness agreement, including the position of the adjective (prenominal vs. post-nominal), the definite marking of the noun and the obligatoriness of the definite markers. These empirical differences unfortunately make the relevant analyses of Hebrew and Arabic difficult to apply to the Amharic facts.

The relevant analyses include Fassi Fehri 1999, Wintner 2000, Shlonsky 2004 and Pereltsvaig 2006,⁴² and they almost uniformly assume the noun and adjective are merged with definiteness features that correspond morphologically to definite markers. The features on the adjective are then licensed through some kind of structural relationship with the noun or NP. Fassi Fehri (1999) and Shlonsky (2004) advocate spec-head analyses of definiteness agreement.⁴³ Shlonsky in particular proposes that, when a DP has post-nominal adjectives, the NP has moved through the specifiers of the adjectives (abstracting away here from some functional heads). This results in a spec-head relationship between the NP and each adjective, which licenses definiteness agreement on the

⁴¹ This generalization is deliberately broad -- I am glossing over the details of definite-marking in construct state nominals, with demonstratives, etc.. Note also that Arabic (but not Hebrew) has agreement in **in**definiteness.

⁴² Note that many classic articles on the Semitic DP discuss definiteness agreement, but do not necessarily provide an explicit mechanism for it (see e.g., Borer 1999, Danon 2001).

⁴³ Although Fassi Fehri (1999) later develops a Kayneian approach to definite marking similar to some accounts of Greek *poyldefinites*.

adjective. In contrast, Pereltsvaig (2006: Section 6) argues for an Agree account. She assumes an Abney-style DP where AP is sister to D, and argues that N (not NP) raises through the adjective heads and checks their definiteness features. Finally, Wintner (2000) maintains that adjectives are marked for definiteness in the lexicon, and then select a definite-marked nominal head.

All of these accounts rely on the noun having definite features inherently, which is implausible for Amharic. These features would almost never surface, and indeed would have to be erased in exactly the situation that seems to require them for agreement (when there are adjectives). Also, almost all the accounts rely on the movement of the noun through adjectival projections in order to create structural configurations that license agreement. Since Amharic does not have postnominal adjectives, there is no independent motivation for this movement (and the movement would result in the incorrect word order unless further movement is stipulated). Thus, while the Hebrew and Arabic definiteness analyses are successful, they cannot be transferred directly to Amharic. Perhaps in future work, it will be possible to apply the definiteness agreement analysis developed here to other Semitic languages.

7 CONCLUSION

The primary goal of this paper was to provide a thorough analysis of definite marking in Amharic. I argued that definite marking can occur in one of two ways: by the Local Dislocation of a morphophonologically dependent D (obligatory definite marking), and as the reflex of a morphological agreement process between D and adjectives (optional definite marking).

An empirical issue left open concerns the obligatory definite marking of stacked relative clauses, where both relative clauses are marked for definiteness (see (13)). Interestingly, this pattern is similar to a different set of data also seen in this paper: the coordination facts, where the definite marker appears on both conjuncts. I tentatively suggest, then, that stacked relative clauses are actually *asyndetically* coordinated. *Asyndetic* coordination is generally licensed for full clauses in Amharic (Leslau 1995: 726), and it is not uncommon for languages to prohibit stacked relative clauses (see Perkins 1982 on Navajo, Bodomo and Hiraiwa 2004 on Dagaare (Niger-Congo)).⁴⁴

From a theoretical perspective, the account developed here maps out certain key properties of the syntax-morphology interface. In Minimalism, 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 in that morphological operations cannot access previously spelled-out phases. 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 the analysis of optional definite marking, it was shown that not all morphological operations respect phase impenetrability – *Agr* Insertion and Feature Copying do not. However, these operations occur at a different stage in the derivation than Local Dislocation, which led me to suggest that spell-out, or at least some kind of spell-out, occurs late, at Vocabulary Insertion/Linearization. I close with some discussion of the idea of late spell-out.

A late spell-out within PF raises the question of how the syntactic derivation is sent to PF in the first place. If there is no cyclic spell-out from syntax to PF, it may be predicted that syntactic operations can access any portion of the derivation at all times, and this is clearly false. I would like to suggest the following model of syntax and PF that makes the correct predictions at each level. Suppose that the syntax is exactly the same as before: there is cyclic spell-out to PF and, once spelled-out, a phase is impenetrable to later syntactic operations. However, at the first stage of PF (before Vocabulary Insertion/Linearization), the operations that occur (Lowering, Feature Copying,

⁴⁴ Also, in recently obtained data, a consultant found definite-marking on the second relative clause in a stacked relative to be optional. This is exactly the pattern predicted by the analysis here, and it indicates that some speakers may be able to stack relative clauses.

etc.) are not restricted by phase impenetrability. This in fact accords with previous research on some of these operations. Postsyntactic agreement (Feature Copying) has been independently argued not to respect phase impenetrability (Legate 2005). Moreover, many examples of Lowering seem to cross phase boundaries, although this depends on whether the head of the phase is considered to be part of the spell-out domain (e.g., T-to-*v* Lowering in English; Embick and Noyer 2001).

After the initial operations of PF finish, I propose that the derivation is linearized cyclically by phase, i.e. the initial spell-out to PF and the linearization algorithm use the same units when applying cyclically (perhaps for economy reasons). Phase impenetrability holds post-Linearization, in that operations like Local Dislocation cannot access previously-linearized chunk material. Additional evidence that phases are relevant post-Linearization comes from the growing body of literature on the role of phases in prosody (see e.g., Kratzer and Selkirk 2007), since prosodic phrasing and operations occur post-Linearization in Distributed Morphology (Embick and Noyer 2001).

The predictions and consequences of these ideas should be explored further. However, together with the analysis of definite marking, they represent a start to a research program focused on cyclicity and impenetrability effects in the syntax, the first stage of PF and at linearization.

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Figure 1

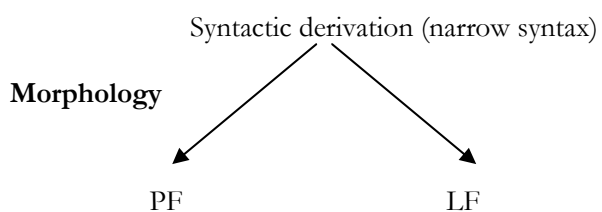


Figure 2

