

## CHAPTER 4: NUMBER IN AMHARIC NOMINALS

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### 1 INTRODUCTION

The previous chapter focused on the morphological and syntactic representation of gender in Amharic nominals. In this chapter, I focus on number, another phi-feature that plays a large role in the morphology and syntax (and semantics) of nominals. One of the main properties of the Amharic number system is a clear difference in the behavior of irregular and regular plurals, and the main goal of the chapter is to account for these differences. Specifically, I develop a split analysis of number in the Amharic DP, deriving the empirical contrasts between irregular and regular plurals by positing that irregular plurals are derived from a *n* head that has a plural feature whereas regular plurals are derived from a Num head that has a plural feature.

In Section 2, the basic descriptive facts about number in Amharic are laid out. In Section 3, the differences between irregular and regular plurals are detailed and evidence for the split analysis is presented. An analysis where plural features are found in two locations within the same DP (*n* and Num) naturally raises questions about the relationship between the two heads. In Section 4, a number of different analyses of the relationship between *n*[+PL] and Num[+PL] are compared, and an analysis where the plural feature is shared between *n* and Num is shown to be the most successful. Section 5 concludes with some discussion of the larger ramifications of the analysis, both in terms of its cross-linguistic implications and its impact on morphosyntactic theory.

### 2 NUMBER IN NOMINALS

Amharic has two numbers: singular and plural (see description in Leslau 1995:169-179, Cohen 1970:70-74, Kapeliuk 1994). It lacks the dual of some Semitic and Afroasiatic languages (e.g., Arabic, Egyptian).<sup>1</sup> Singular nominals are generally unmarked, whereas plural nominals generally take the suffix *-otΣtΣ*.

- (1)    a. bet-u                    b. bet-otΣtΣ-u  
         house-DEF            house-PL-DEF  
         the house              the houses

However, an unmarked indefinite nominal can be interpreted as either singular or plural (Leslau 1995:179, Hartmann 1980:283, Cohen 1970:72, Kapeliuk 1994:10-18, see also Corbett 2001:15).

- (2)    l→dZ-u      mäs'haf wässäd-ä  
         child-DEF book    take.PF-3MS  
         Translation 1: The child took a book.  
         Translation 2: The child took some books.  
         (Leslau 1995:179)

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<sup>1</sup> Hartmann (1980:285) identifies five numbers in Amharic, but the 'numbers' besides singular and plural are not what would traditionally be considered numbers (for example, partitives are included among them). Yimam (1996) identifies four numbers: singulative, singular, paucal and plural. The term 'singulative' generally indicates a singular nominal that is inflected for singular number, often because the bare form is a collective (singulatives and collectives are common in Arabic, see e.g., Ojeda 1992, Zabbal 1992. See also Corbett 2000:17-18, 256, for a cross-linguistic perspective). This may be an accurate description of the forms that Yimam claims are singulative, but they are restricted to a small subset of the vocabulary of the language (certain kinship terms that must take a suffix when definite and singular; see Leslau 1995:160-161). As for the paucal, it is claimed in Yimam 1996 that the plural suffix is in fact a paucal (i.e., used for small numbers of entities), but this claim is not borne out in Leslau 1995 (see p.257) or in my fieldwork where multiple consultants used the plural suffix for a numeral denoting over a million entities.

The direct object *mäs'əf* 'book' is unmarked and can be translated as either a single book or multiple books. The number neutrality indicates that these nominals could actually be syntactically or semantically incorporated nominals (see e.g., Farkas and de Swart 2003 and references therein), as presciently suggested by Kapeliuk (1994:10-13). Crucial empirical facts to settle include whether these nominals are necessarily verb-adjacent (see some discussion on this in Kapeliuk 1994:12), whether they can be case-marked, whether they can undergo movement, and whether they can ever be interpreted as epistemically or scopally specific. Such issues will require careful syntactic and semantic fieldwork to be untangled, and I will set the number-neutral indefinites aside for the most part in the remaining discussion of number.<sup>2</sup>

The plural suffix is the predominant and/or typical way of forming (definite) plurals in Amharic (Leslau 1995:171, Hartmann 1980:285). However, for many nouns, the plural can be morphologically marked via means other than the plural suffix *-otΣtΣ*. These means include other suffixes, prefixes, nonconcatenative morphology (ablaut and a change in the prosodic template) or any combination of these factors. As a group, most of these pluralization strategies are either descendants of or borrowings from Ge'ez (Leslau 1995:179, cf. the description of Ge'ez plural nominals in Lambdin 1978:18-19).

Irregular plurals are not uncommon among Afroasiatic languages in general, especially Arabic, and have been studied extensively (see e.g., Ojeda 1992, Zabbal 2002, McCarthy and Prince 1990, McCarthy 2000 on Arabic, Palmer 1955 and 1962 on other Ethio-Semitic languages, and Ratcliffe 1998 on broken plurals throughout Semitic, among many others). However, unlike Arabic, Amharic uses a regular pluralization strategy more often than the irregular strategies. Leslau (1995:171) further comments that many nouns with irregular plurals are "learned words," i.e., that many of the irregular pluralization strategies are not productive.

The irregular plurals can be sorted into a number of categories depending on pluralization strategy. The first category is nominals that take a suffix other than *-otΣtΣ* when pluralized (Leslau 1995:171, Hartmann 1980:286-287, Cohen 1970:71), e.g. the suffix *-an* or the suffix *-at*. These nominals are often called the 'external plurals' (see Hasselbach 2007 for some recent speculation on their historical development within Semitic).

- (3)
- a. *mämh*→*r* 'teacher' → *mämh*→*r-an* 'teachers'
  - b. *mäzämm*→*r* 'cantor' → *mäzämm*→*r-an* 'cantors'
  - c. *h*→*s'an* 'baby' → *h*→*s'an-at* 'babies'
  - d. *k'an* 'day' → *k'an-at* 'days'
  - e. *kah*→*n* 'priest' → *kah*→*n-at* 'priests'
  - f. *k'al* 'word' → *k'al-at* 'words'

Some nominals undergo nonconcatenative morphological processes to inflect for plural number, i.e., the consonantal root remains constant but the vowels change in quality (ablaut/melodic overwriting) and the prosodic structure (the template) changes as compared to the singular form (Leslau 1995:172, Hartmann 1980:288, Cohen 1970:71-72). Such nominals are also often called broken or internal plurals (see McCarthy and Prince 1990 for a detailed overview of Arabic broken plural morphophonology). There are only a few plurals which undergo **only** nonconcatenative morphology.

- (4)
- a. *känfär* 'lip' → *känaf*→*ɸ* 'lips'
  - b. *d*→*ng*→*l* 'virgin, nun' → *dänag*→*l* 'nuns, celibates'

Most are also inflected with a prefix and/or a suffix along with vocalic and prosodic alterations.

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<sup>2</sup> Turkish has a similar class of number-neutral nominals which are necessarily non-specific, do not receive case marking, must be verb adjacent and cannot undergo movement (Jorge Hankamer, p.c.). Kapeliuk (1994) is aware of this similarity and uses terms borrowed from a Turkish grammar to situate her discussion of Amharic number-neutral nominals. She suggests that Amharic number-neutral nominals must be verb-adjacent and do not receive case marking, but she does not discuss movement.

- (5) a.  $n \rightarrow$ gus ‘king’  $\rightarrow$  nägäs-tat ‘kings’  
 b. mäsf $\rightarrow$ n ‘prince’  $\rightarrow$  mäsaf $\rightarrow$ n-t  
 c. ganen ‘demon’  $\rightarrow$  a-gan $\rightarrow$ n-t ‘demons’  
 d. mäś’haf ‘book’  $\rightarrow$  mäś’ah $\rightarrow$ f-t ‘books’  
 e. kokäb ‘star’  $\rightarrow$  käwak $\rightarrow$ b-t ‘stars’

Certain nouns also undergo partial reduplication in the plural.<sup>3</sup>

- (6) a. wäyzäro ‘lady, Mrs.’  $\rightarrow$  wäyzaz $\rightarrow$ rt ‘ladies’  
 b. gobäz ‘young man’  $\rightarrow$  gobäzaz $\rightarrow$ rt ‘young men’

It is likely that there are morphophonological subregularities within the irregular plural system, e.g., that quadriconsonantal roots pluralize via a CäCaC $\rightarrow$ Ct pattern where the final *-t* is deleted after liquids (cf. the subregularities within the English irregular past tense inflection). I leave the detailed investigation of these generalizations for future research that is more morphophonologically-oriented.

To sum up, in Amharic, singular nominals are unmarked, and plural nominals are either unmarked (if non-referential), marked with a suffix *-ot*  $\Sigma/\Sigma$ , or derived through other, irregular means. In the next section, a broad range of data is presented on the contrasting properties of regular and irregular plurals, and a split analysis of number is developed.

### 3 THE REPRESENTATION OF NUMBER: A SPLIT ANALYSIS

There seem to be three options for where number is located within the DP in general: number is its own functional projection (NumP; see e.g., Ritter 1991, 1992 among many others), number is a feature on *n* (see e.g., Lecarme 2002, Lowenstamm 2008, Acquaviva 2008a), or number is a feature on the root.<sup>4</sup> There is a reason why there are no citations for the last option. It is highly implausible for number to be a feature of roots because it is not true for any language that each root is associated only with a certain number, i.e., the nominal associated with any given root can typically be inflected for either singular or plural or number.<sup>5</sup> Moreover, number is usually represented morphologically across languages by an addition or change to the nominal, e.g., an affix, a clitic or a stem change of some kind (ablaut, prosodic structure alteration, etc.). If one were to claim that number is part of the root, then all plural roots would (partially) contain the same string of segments or be altered in exactly the same way, which seems to glaringly indicate that a generalization is being missed.

No one advocates for number being on the root, but, in contrast, it has been widely assumed that number inflection is housed in Num(ber)P. NumP was originally proposed in Ritter 1991, 1992 (see also Carstens 1991 and Valois 1991). Ritter (1991) argues that there is an additional functional projection between DP and NP in Hebrew and that the projection houses number inflection. In Ritter 1992, she demonstrates the existence of NumP in Haitian and Hungarian as well. Since Ritter’s work, NumP has been assumed or shown to be the syntactic location of number features in a wide variety of languages, including the Romance languages (Bernstein 1993 et seq.), Kiowa (Harbour 2007:62), Chinese (Li 1999), Arabic (Fassi Fehri 1993,

<sup>3</sup> Nominals may also undergo total reduplication but this leads to either a distributive or an adverbial interpretation, e.g., *gara gara-n*  $\rightarrow$  *n* *bedä* hill hill-DEF-ACC he.went = ‘he went by way of the hills’ (see Leslau 1995:173-174).

<sup>4</sup> The claims in this section (and throughout the chapter) are limited to count nouns. Mass nouns generally do not pluralize except with reference to kinds (*wines, oils*) and initial results from my fieldwork show that it is difficult to pluralize mass nouns in Amharic as well.

<sup>5</sup> The obvious exception here is *pluralia tantum* roots, e.g., *scissors, shears* and *pants* in English or *mayim* ‘water’ in Hebrew (the latter is technically a *duale tantum*). See Acquaviva 2008 (15-21) for detailed discussion of how *pluralia tantum* is a more nuanced phenomenon than it originally seems to be (e.g., the acceptability of *a pant leg*) and how *pluralia tantum* roots cross-linguistically fall into particular semantic classes. Note, though, that despite the thorough investigation of *pluralia tantum*, number features are explicitly banned from being on roots in Acquaviva 2008 (see p. 5).

Zabbal 2002), Welsh (Rouveret 1994), and English (Embick and Noyer 2007).<sup>6</sup> NumP is now largely taken to be the default location of number features within a DP unless proven otherwise (as in e.g., Ghomeshi 2003).

In Distributed Morphology in particular (see e.g., Embick and Noyer 2007:307), it has been assumed that number is expressed morphologically through the spell-out of Num, and that singular and plural nominals combine with the Num head in some fashion when the two are realized as a single morphosyntactic unit (e.g., through Num lowering, *n* + the root raising, Local Dislocation, etc.). Num[+PL] results in inflection for plural number, whereas Num[-PL] results in inflection for singular number. I similarly take it as a given for now that NumP is the locale of (at least some) number features in Amharic (see also Section 4.1.1 for syntactic arguments that NumP must be present in Amharic).

However, the other option should not be forgotten: what if a root combined with a category-defining *n* head that contained a plural feature? The nominal would be, from an intuitive point of view, inherently plural, even if *n* is spelled out as a separate vocabulary item from the root. Note that the **root** is not inherently plural, just the nominal that results from combining the root with the category-defining head *n*. Number on *n* has thus often been characterized as more ‘lexical’ than plural from Num, and it has accordingly been proposed that number features are found on *n* for more ‘lexical’ plurals within languages (plurals that have idiosyncratic meaning or display otherwise unusual behavior; see e.g., Acquaviva 2008a, Lowenstamm 2008) and to account for entire plural systems where plurality seems lexical (Lecarme 2002).

Having number on *n* raises numerous questions, though: what predictions does this make about the behavior of *n*, and how does *n* interact with Num? In the remainder of this chapter, I explore these questions and develop a split approach to number in Amharic DPs where number is both on *n* and on Num. Specifically, I propose that irregular plural inflection in Amharic results from the spell out of *n* with a plural feature (*n*[+PL]), whereas regular plural inflection result from the spell-out of Num with a plural feature (i.e., Num[+PL] is spelled out as *-atΣtΣ*). In the rest of this section, I review the differences between *n* and Num and show how they correlate to the differences between regular and irregular plurals in Amharic. In particular, I focus on how having the source of irregular plural morphology be *n* explains many of the unusual properties of Amharic irregular plurals.

In Section 3.1, I discuss previous claims that *n*P is a domain of morphophonological and semantic idiosyncrasy (Marantz 2001, 2007; Arad 2003, 2005). The realization of *n* tends to be morphophonologically irregular and dependent on the identity of the root. Semantically, *n* can also trigger idiosyncratic interpretations of roots. In Section 3.2, I show how Amharic irregular plurals display these idiosyncrasies (and regular plurals do not), and thus irregular plurals seem to be derived via *n* combining with a root. In Section 3.3, I present several additional arguments for a *n*/Num split, looking at double plurals and plurality in derived words, as well as some analyses that have proposed that there is a plural feature on *n* in languages outside of Amharic (Lecarme 2002, Acquaviva 2008a). In Section 3.4, for completeness, I develop a non-split analysis of number and show how it fails to account for the Amharic facts. Finally, in Section 3.5, I briefly discuss the similarities and differences between the Amharic plural system and the well-studied Arabic plural system, which seem to be superficially similar.

### 3.1 Root-Derived vs. Word-Derived Words

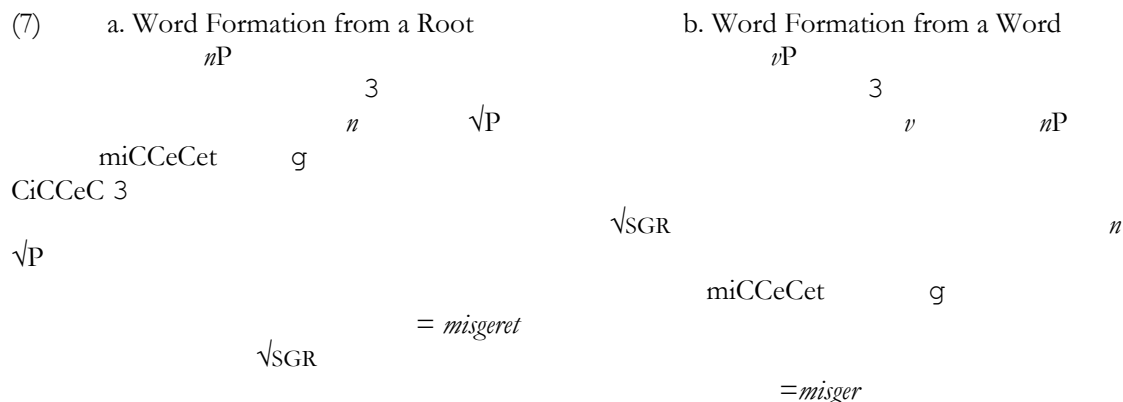
Marantz (2001, 2007) and Arad (2003, 2005) have developed a framework that makes distinct empirical predictions for word formation from roots (the combination of a root and a category-defining head) and word formation from words (the combination of some head and an already-formed *x*P). The predictions for word formation from roots are borne out for irregular plurals, whereas the predictions concerning word formation from words are borne out for the regular plurals.

Under traditional lexicalist theories of morphosyntax, there is a distinction between lexical and syntactic word formation. Word formation in the lexicon is more prone to phonological and semantic irregularities (e.g., special phonological processes, idiomatic meanings), whereas syntactic word formation is morphophonologically regular and has semantically predictable meaning. However, in Distributed

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<sup>6</sup> Although see Ghomeshi 2003, Déprez 2004, and Heycock and Zamparelli 2005 for arguments that some languages lack NumP.

Morphology, there is no lexicon or lexical processes, so the contrast must be captured in a different way. Marantz (2001, 2007) and Arad (2003, 2005) propose that ‘lexical’ word formation corresponds to word formation from roots -- the combination of a category defining head ( $n, v$ ) with a root. ‘Syntactic’ word formation corresponds to word formation from words -- the combination of some head with a categorized word (i.e.,  $nP, vP$ ). The contrast is shown in general in (7), where the derivation of the Hebrew nominal *misgeret* ‘frame’ is shown on the left and the derivation of a denominal verb *misger* ‘to frame’ from *misgeret* is shown on the right.



In (7)a, the category-neutral consonantal root  $\sqrt{SGR}$  combines with a  $n$  that contains a nominal template. The end result is the nominal *misgeret* ‘frame.’ In (7)b, the already-derived nominal *misgeret* combines with a  $v$  that contains a verbal template, with the end result being the denominal verb *misger* ‘to frame.’<sup>7</sup>

Using data from Hebrew, a language whose morphological system is very much based on roots, Arad (2003, 2005) demonstrates how words formed from roots (hence root-derived words) have more phonological and semantic idiosyncrasies than words formed from other words (hence word-derived words). To give a specific example, initial [n] assimilates before a stop and initial [y] assimilates before [c] in certain Hebrew root-derived verbs.

(8)	<u>Root</u>	<u>Pattern</u>	<u>Verb</u>	
	a. $\sqrt{NCL}$	hiCCiC	hicil	‘to save’ (*hincil)
	b. $\sqrt{YCB}$	hiCCiC	hiciv	‘to position’ (*hiyciv)

(Arad 2003:771-772, (45))

However, in verbs that have been derived from some already-formed word, no such assimilations take place (see also Bat-El 1994 where illegal consonant clusters in nominal loans are broken up when verbs are formed from the loans).

(9)	<u>Base</u>	<u>Pattern</u>	<u>Verb</u>	
	a. neged ‘opposite’	hiCCiC	hingid ‘to put in opposition’	
	b. necax ‘eternity’	hiCCiC	hinciac ‘make eternal’	(Arad 2003:772, (46))

To give an example of semantic idiosyncrasies, verbs and nouns formed from roots in Hebrew can give rise to a wide range of meanings related to the core meaning of the root, e.g., for the root  $\sqrt{SGR}$  which combines with a variety of category-defining heads (patterns) in (10).

<sup>7</sup> The *-et* suffix in the nominal template marks feminine gender. It does not surface in the denominal verb, though. One way to prevent *-et* from being inserted would be to have a separate, null Vocabulary Item for the realization of  $n$  in the context of a  $v$ .

- (10)  $\sqrt{\text{SGR}}$
- a. CaCaC    *sagar*    ‘to close’
  - b. hiCCiC    *hisgir*    ‘to extradite’
  - c. hitCaCCeC    *histager*    ‘to cocoon oneself’
  - d. CeCeC    *seger*    ‘closure’
  - e. CoCCayim    *sograyim*    ‘parentheses’
  - f. miCCeCet    *misgeret*    ‘frame’

The root  $\sqrt{\text{SGR}}$  seems to have a core meaning associated with closure or separation, but it can take on multiple interpretations in different environments, a phenomenon which Arad calls ‘multiple contextualized meaning.’ However, consider the nominal and denominal verb that were shown in (7).

- (11) a. *misgeret*    ‘frame’  
 b. *misger*    ‘to frame’

The denominal verb *misger* ‘to frame’ has an interpretation that is directly related to the nominal -- there is no interpretive leeway and the semantic connection between the two words is straightforward.

Arad (2003, 2005:Ch. 7) also provides independent motivation for the generalization that root-formed words are more likely to have morphophonological and semantic idiosyncrasies. She proposes that this is because the category-defining head that combines with a root defines a phase, and thus the morphophonology and semantic interpretation of the root-formed word is set immediately after it is formed by the spelling-out of the phase (see also Marantz 2007 for some discussion of the same point w.r.t *v* in particular). For example, since the grammar has (already) assigned a meaning to the nominal *misgeret* ‘frame,’ that meaning must be the base of meaning for the corresponding denominal verb.

Although the connection to phases provides some grounding for Arad’s observations, it is perhaps the weakest part of the analysis. Phases are generally considered to be impenetrable once they have been spelled out (the Phase Impenetrability Condition, Chomsky 2000, 2001, 2004). However, it is not discussed fully in Arad 2005 what the consequences are of connecting the central generalization to phases, and see Section 3.2.1 for some recent evidence that this part of the analysis may make predictions that are too strong. Even setting aside this portion of the analysis, though, it still makes clear predictions about how root-derived and word-derived words should behave with respect to the morphophonology and the semantics, and it is time to see how these predictions hold for Amharic irregular and regular plurals respectively.

### 3.2 Irregular Plurals as Root-Derived

Recall that under the system developed by Arad and Marantz, root-derived words are predicted to have more phonological idiosyncrasies than word-derived words. Irregular plurals in Amharic do not undergo distinct phonological processes from regular plurals (e.g., assimilation), to the best of my knowledge.<sup>8</sup> However, there are two ways in which they display phonological idiosyncrasy as predicted by Marantz and Arad’s research: non-productivity and paradigmatic gaps.

Arad (2003:739) notes that word formation from roots is quite often non-productive. Roots may arbitrarily combine with particular category-defining heads. For example, in English the root  $\sqrt{\text{CLUMS}}$  combines with the adjectivalizing head *-y*, but  $\sqrt{\text{MALIC}}$  combines with the adjectivalizing head *-ious*. In other words, there can be an arbitrary association between a root and the category-forming head which it combines with.

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<sup>8</sup> Arad (2003, 2005) notes that, in English, deverbal nouns have a verbal stress pattern (*consént*), whereas pairs of nouns and verbs that are both root-derived have different stress patterns (*recórd*, *récord*). It seems, then, that stress could be a potential area where irregular and regular plurals could be differentiated, but unfortunately, stress in Amharic is very understudied, probably because the facts are very murky (see the brief remarks in Leslau 1995:44-45, and the more thorough investigation in Mullen 1986).

This is certainly borne out for the Amharic irregular plural system. Different roots arbitrarily combine with different  $n[+PL]$ : a suffix like *-an*, a pattern change plus a suffix, reduplication, etc.<sup>9</sup> Specifically, I assume that there are different vocabulary items associated with  $n[+PL]$  that are contextually specified for what roots they can occur with.

- (12) a.  $n, [+PL] \leftrightarrow -at / \{ \sqrt{K'AL}, \sqrt{WÄR}, \sqrt{KAH} \rightarrow N \dots \}$   
 b.  $n, [+PL] \leftrightarrow aa, -tat / \sqrt{N} \rightarrow GUS$   
 c.  $n, [+PL] \leftrightarrow aa \rightarrow / \{ \sqrt{KÄNFÄR}, \sqrt{D} \rightarrow NG \rightarrow L \dots \}$   
 d.  $n, [+PL] \leftrightarrow -an / \{ \sqrt{MÄMHIR}, \sqrt{MÄZÄMM} \rightarrow R \}$

The Vocabulary Items in (12) raise important questions about roots in Amharic and about the morphophonology of plural inflection (e.g., how the vocalic affix in (12)c overwrites the vowels of the root, how the two-piece affix in (12)b is aligned, etc.). These questions are outside of the main investigation here, but see Kramer 2007, Tucker 2009 and Embick 2008 for some general discussion. It is also worth noting that a thorough morphophonological analysis of the Amharic irregular plurals could probably narrow down the number of vocabulary items or re-state some of them in terms of phonological constraints (cf. work on Arabic broken plurals like McCarthy and Prince 1990), but there is a core of arbitrariness that remains in the association of a particular  $n[+PL]$  with a particular root or set of roots.

As for the paradigmatic gaps, all the roots that do not have irregular plurals essentially constitute a large gap in the paradigm of roots that combines with  $n[+PL]$ . This is parallel to the fact that not all verbs in Hebrew combine with every binyan, e.g., the root  $\sqrt{QRC}$  only combines with the CaCaC binyan (Arad 2005:193-194). In Amharic, it is the case that not all roots can combine with the category-defining head  $n[+PL]$ , or in other words, only certain roots have an inherently plural nominalization.

The regular plural lacks these phonological idiosyncrasies. As expected, the morphophonological realization of Num does not vary according to the root (it is always the suffix *-otΣtΣ*).<sup>10</sup> Also, surprisingly, there are no paradigmatic gaps in regular plural formation, i.e., it is very productive.<sup>11</sup> All nominals in Amharic may be regularly pluralized, even if they also have an irregular plural.

(13)	<u>Singular</u>	<u>Irregular Plural</u>	<u>Regular Plural</u>	<u>Gloss</u>	
	kah→n	kah→n-at	kah→n-otΣtΣ		priest
	k'al	k'al-at	k'al-otΣtΣ	word	
	mäs'haf	mäs'ah→ft	mäs'haf-otΣtΣ	book	
	kokäb	käwak→bt	kokäb-otΣtΣ	star	
	n→gus	nägästat	n→gus-otΣtΣ	king	
	mälak	mäl?ak	mälak-otΣtΣ	angel	
	wäyzäro	wäyzaz→rt	wäyzär-otΣtΣ	lady, Mrs.	

The fact that all nominals have regular plurals in Amharic raises the question of when regular and irregular plurals are used: see [Section 3.3](#) for discussion. The main point for now is that regular plural formation displays no (or at least, no easily detectable and/or very few) paradigmatic gaps, exactly as predicted if it is

<sup>9</sup> Arad discusses this in terms of the root selecting for the category-defining head, and assumes that there are different category-defining heads for each different morphophonological realization. However, she notes in a footnote that it could be that certain combinations of root and binyan are unacceptable at the interfaces (Arad 2005:193), and this is the approach I will take.

<sup>10</sup> If a noun ends with a vowel, an epenthetic *-w* or *-y* is inserted between the noun and the plural suffix depending on the quality of the vowel of the noun. The glide is inserted purely to avoid hiatus; see discussion in Leslau 1995:170.

<sup>11</sup> The data here is from fieldwork -- Leslau (1995:171, 172) and Cohen (1970:71-72) note that some nouns have two different plural forms, one irregular and the other with *-otΣtΣ*, but they do not give many examples.

derived from a word and not from a root. In terms of phonological idiosyncrasies, then, the irregular plurals are non-productive and have paradigmatic gaps, and the regular plural is productive and has no gaps, as predicted if the former corresponds to *n* and the latter to Num.

It may seem like the Elsewhere Condition/ Pān-inian Principle is violated in (13). A more specific rule (for forming irregular plurals) does not necessarily ‘win out’ over a less specific rule (for forming regular plurals). This is in fact an initial indication that irregular and regular plurals correspond to different morphemes. In Distributed Morphology, the Pān-inian Principle comes into play in deciding which Vocabulary Item to insert: a more specific Vocabulary Item must be inserted instead of a less specific Vocabulary Item (see e.g., Halle and Marantz 1993). However, if irregular plurals are formed via plural features on *n* and regular plurals are formed via plural features on Num, they are different ‘slots’ for Vocabulary Insertion and Vocabulary Items will never compete for insertion between them. This is discussed in more detail in [Section 3.4](#).

The regular and irregular plurals act as word- and root-derived words respectively in terms of semantic idiosyncrasies. The effects are not as dramatic as within the Hebrew paradigms (mainly because each root only has one irregular plural form and cannot be inflected over and over again with different meanings), but they are telling nonetheless. Several irregular plurals are associated with special interpretations.

(14)	<u>Singular</u>	<u>Gloss</u>	<u>Irregular Plural</u>	<u>Gloss</u>
	wār	month	wār-at	season
	nāfs	soul	nāfs-at	small insects
	l→bs	clothes	albasat	sacerdotal garments
	h→zb	nation	ahzab	barbarians

The irregular plurals in (14) all can receive typical plural interpretations, e.g. ‘months,’ ‘souls,’ etc.<sup>12</sup> However, they can also receive an interpretation where they denote a different, but related concept, although how direct the relation is varies, from reasonably straightforward (a set of months = a season) to less straightforward (many nations = barbarians?).<sup>13</sup> Regular plurals do not receive special interpretations; they always denote the sum plural of the nominal that they are inflecting (i.e., set of all sums of the elements in the set denoted by the nominal; see Link 1983).<sup>14</sup> Moreover, recall that all nominals can be inflected for a regular plural. When the nominals in (14) are regularly pluralized, they can crucially no longer receive their special interpretations.

(15)	<u>Singular</u>	<u>Regular Plural</u>	<u>Gloss</u>
	wār	wār-otΣtΣ	months, *season
	nāfs	nāfs-otΣtΣ	souls, *small insects
	l→bs	l→bs-otΣtΣ	clothes, *sacerdotal garments
	h→zb	h→zb-otΣtΣ	nations, *barbarians

This demonstrates that the special interpretation is associated only with the root-derived irregular plural, just as they should be if they correspond to *n*.

There is one additional semantic idiosyncrasy worth mentioning, although only tentative conclusions may be drawn. Certain irregular plurals seem to result in group interpretations, whereas their regular plural counterparts result in typical sum plurals.

<sup>12</sup> Speakers vary in whether *ahzab* can mean ‘peoples’ -- for some, it has already been reanalyzed as a collective nominal that purely means ‘barbarians.’ See fn. 13.

<sup>13</sup> Occasionally, an irregular plural that has a special meaning is even reanalyzed as a singular noun that has only the special meaning. For example, the nominal *ahgur* ‘continent’ is singular, but it originally was an irregular plural of *agār* ‘country’ (many countries = a continent).

<sup>14</sup> Leslau (1995:173) lists a few possible exceptions, the most plausible of which is *gab* → *ṭΣtΣ-otΣtΣ* ‘marriages, relatives through marriage’ from the nominal *gab* → *tΣtΣa* ‘marriage.’ See [Section 5](#) where it is discussed how regular plurals can occasionally give rise to idiomatic meanings, but crucially much, much less often than root-derived words.



- (16)  $\Sigma$ um ‘official’  
 a.  $\Sigma$ um-ot $\Sigma$ t $\Sigma$  ‘officials (regular plural, a group taken individually)’  
 b.  $\Sigma$ umam $\rightarrow$ nt ‘a group of officials’
- (17) m $\acute{a}$ n $\acute{a}$ k<sup>w</sup>se ‘monk’  
 a. m $\acute{a}$ n $\acute{a}$ k<sup>w</sup>se-wot $\Sigma$ t $\Sigma$  ‘monks’ (regular plural, a group taken individually)  
 b. man $\acute{a}$ k<sup>w</sup>äs $\acute{a}$ t ‘clergy, monks as a class’

The interpretations here are from Leslau, and remain to be confirmed in my own fieldwork. However, they tantalizingly suggest a connection between irregular plurals in Amharic and broken plurals in Arabic (see also [Section 3.5](#)). In Arabic, broken plurals can also receive a group interpretation, and in the account developed in Zabbal 2002, the group plurals are derived from a separate group plural operator that is syntactically closer to the nominal head than the typical plural operator, i.e., just like *n* as compared to Num. A clear elucidation of group plurals in Amharic is clearly beyond the task at hand, but the data here at least suggest not only that irregular plurals are associated with semantically non-standard plural denotations (i.e., idiosyncrasies), but that they are derived by a closer head to the root than regular plurals.

I conclude, then, that irregular plurals show properties of root-derived words, lending support for the proposal that they are derived from *n*[+PL]. In turn, regular plurals show properties of word-derived words, lending support to the idea that they are derived from Num[+PL].

### 3.2.1 Coda: Post-Arad/Marantz

As discussed in [Section 3.1](#), Marantz and Arad’s proposals about word-derived and root-derived words can be seen as relying on phases, specifically, assuming that a root plus its category-defining head *x* are the spell-out domain of a phase *x*P. Once spelled out, a phase becomes impenetrable (as per Chomsky 2000, 2001, 2004), so vocabulary insertion for later morphemes cannot ‘see inside’ the root plus *x* unit and the semantic interpretation of that unit is fixed. This accords well with the Amharic plural data where regular plural inflection (Num) does not vary morphophonologically according to the identity of the root and does not change the meaning of the root.

However, the impenetrability of the root and categorizing head has been shown to be too restrictive for many languages in a very recent strand of research (see e.g., Borer 2008, 2009, forthcoming, Alexiadou 2009, Harley 2009, Gribanova 2009). What really seems to be the case is that the unit formed by the root and its first categorizing head is **more likely** to be phonologically and semantically idiosyncratic. However, higher heads can have allomorphs that depend on the identity of the root and can sometimes affect the interpretation of the root. In this section, I review some of the evidence that Arad and Marantz’s proposals are too strict, briefly discuss an alternative proposal, and show that, regardless of how the debate over the domain for idiosyncrasy is ultimately resolved, the split in the Amharic plural system is still motivated.

I will focus on the question of semantic idiosyncrasy since the predictions that Arad and Marantz make in this area are clearer than for morphophonology. Arad (2003, 2005) makes the specific claim that the combination of a root with a category-defining head (*n*, *v*, etc.) can trigger a variety of idiomatic interpretations. However, once a root-derived word is formed, the interpretation is fixed and any subsequent derivation must use this interpretation. Nevertheless, it does not seem to be the case that all word-derived words keep the original interpretation of the root. Consider the examples in (18).

- (18) a. edit  $\rightarrow$  editor  $\rightarrow$  editorial ‘of or relating to the editor,’ ‘opinion article’  
 b. nature  $\rightarrow$  natural  $\rightarrow$  naturalize ‘make natural, become a citizen by residing in a country’  
 c. class  $\rightarrow$  classify  $\rightarrow$  classifieds ‘newspaper advertisements’  
 (Harley 2009)

Looking at (18)b, the verb *naturalize* is derived via a *v* combining with the *aP* *natural*, which is itself in turn derived from the *nP* *nature* (whose *n* is null). This is shown in (19) (presumably, the root NATURE raises to *v* or *v* lowers through *a* and *n* to the root).

(19) [<sub>vP</sub> -ize [<sub>aP</sub> -al [<sub>nP</sub> ∅ NATURE]]]

According to Arad, the interpretation of *nature* should be fixed within the first categorizing head it combines with (the *nP* in this case) and cannot be altered. Subsequent derivation can only be interpreted compositionally as building on this meaning. However, the verb *naturalize* not only has the predicted compositional meaning ‘to make (more) nature-like’ but also ‘to become a citizen by residing in a country.’ This is an idiosyncratic interpretation that does not build on the root meaning of *nature* and it is not expected under Arad.

However, there is not a free-for-all in terms of compositional vs. idiosyncratic meaning. Harley (2009:6-7) notes that “the first combination of a root with a categorizer will likely be idiosyncratic” and that further derivation **can** be idiosyncratic until the first ‘semantic cyclic node’ is reached. The question then becomes what this cyclic node is. Harley (2009) focuses on verbal projections and proposes that it is Voice, but some proposals in Borer (2008, 2009, forthcoming) and Alexiadou (2009) are more germane to present concerns about nominal structure.

Borer (2008, 2009, forthcoming) in particular proposes that the first semantic cyclic domain is the first non-categorizing head, e.g., the first head that is not *n*, *v*, *a*, etc. Crucially, this makes the same predictions as Arad w.r.t. the nominal structures I have considered so far, i.e., the structure in (20).

(20)

DP				
3				
D	NumP			
		3		
	Num	<i>nP</i>		
			3	
	<i>n</i>	√P		
		g		
		√		

Under Borer’s assumptions, the first semantic cyclic node is Num, i.e., the semantics sees the complement of this node as a unit and fixes its interpretation at that time.<sup>15</sup> Hence, idiosyncratic interpretation is confined to *nP* and Num cannot alter the basic meaning of the *nP*. This is exactly what is needed for the Amharic data -- irregular plurals (*n*) can trigger idiosyncratic interpretations but not regular plurals (Num).

In sum, then, it seems that despite the fact that Marantz and Arad’s original conception of the root-word distinction is too strict, the correct characterization of where idiosyncratic meaning is computed still provides support for the *n*/Num split in Amharic plurals. Of course, many issues remain open here, including the facts about phonological idiosyncrasy and the details of the post-Arad accounts of semantic idiosyncrasy.<sup>16</sup> I leave these issues for future research (and I hope the Amharic data will play a role in resolving them).

### 3.3 Additional Arguments

<sup>15</sup> It should be noted that the structure here differs from how number is treated in Borer’s body of work. In Borer 2005, number is on two heads: # and DIV where #P dominates DIVP. Interestingly, though DIV can be a categorizing head (F<sub>i</sub>) (Borer 2009) and Borer (p.c.) suggests that DIVP may be the source of idiosyncratic plurals like broken plurals whereas #P would be the source for regular plurals.

<sup>16</sup> See Embick 2009 for some further discussion of the phonological idiosyncracies, although it is unclear whether the account there is strict enough to account for the fact that there are more phonological idiosyncracies when the categorizing head combines with a root than otherwise. See also Gribanova 2009 for an alternative proposal.

In this section, I present several additional arguments for the idea that irregular plurals are derived from  $n[+PL]$  combining with a root and regular plurals are derived from  $Num[+PL]$  combining with a  $nP$ . Most of the arguments are based on further empirical observations from Amharic about the plurals of derived words and double plurals. The final discussion briefly examines some other analyses where  $n$  has been proposed to have a plural feature (Lecarme 2002, Acquaviva 2008a). I show how the plural systems accounted for in these analyses are extremely similar to the Amharic irregular plural system. See also Chapter 5 Section 2 where it is shown how gendered plurals in Amharic lends support to the idea that  $n$  hosts a plural feature.

### 3.3.1 Derivational Selection and Double Plurals

It is well-known that derivational affixes have selectional restrictions (see e.g., the detailed survey of English derivational affixes in Fabb 1988). They can select for a particular category or categories (e.g., the suffix *-able* in English attaches to verbs), or more specifically for particular roots (e.g., the suffix *-y* in English selects for the root  $\sqrt{CLUMS}$ ). They can also select for already derived elements, e.g., the suffix *-ize* selects for stems (loosely speaking) which end in *-tion* (among other elements).

In Distributed Morphology, the terms ‘inflectional’ and ‘derivational’ are not associated with particular types of morphology and have no status (Harley and Noyer 1999:5). However, affixes that have been traditionally called ‘derivational’ usually correspond to category-defining heads ( $n$ ,  $\nu$ ), which makes sense in that these morphemes either fix the category of the root or change the category of a  $xP$ . In contrast, affixes that have been traditionally called ‘inflectional’ usually comprise other kinds of heads: T, Asp, Num, etc. To capture the selection restrictions above in Distributed Morphology, it is reasonably straightforward to posit that a suffix like *-able* is a Vocabulary Item inserted for *a* (adjectivalizing head) in the context of a  $nP$ , a suffix like *-y* is inserted in the context of the root  $\sqrt{CLUMS}$ , and the suffix *-ize* is inserted in the context of  $nPs$  whose head  $n$  is *-tion* (see e.g., Arad 2003, 2005 among others).

Returning to Amharic plurals, it was already discussed how that irregular plurals only occur with (i.e., select for) certain roots, and how this is a point in favor of their being derived through  $n[+PL]$ . However,  $n[+PL]$  can even select for particular stems to combine with, just like a typical derivational affix. Consider the nominal *ityop’p’→yawi* ‘Ethiopian.’ It is internally complex -- made up of the noun *ityop’p’→ya* ‘Ethiopia’ and the gentilic suffix *-awi* which attaches to toponyms and results in a nominal for a resident of the country/city/area, etc. One option for pluralizing *ityop’p’→yawi* (and indeed, any noun ending in *-awi*) is an irregular plural suffix *-an*, resulting in the nominal *ityop’p’→yawi-yan* ‘Ethiopians.’ Therefore, similar to how the suffix *-ize* is inserted in the context of  $nP[-tion]$  in English, the *-an* realization of  $n[+PL]$  is inserted in the context of  $nP[-awi]$  in Amharic.

To the best of my knowledge, Num never has similar selectional restrictions. It is compatible with all kinds of  $nPs$ , from  $n$ ’s that nominalize roots to  $n$ ’s that attach to already-formed  $nPs$ ,  $\nu Ps$ , etc. For example, the nominal *ityop’p’→yawi* itself can be regularly pluralized (at least for some speakers) as *ityop’p’→yawi-yotΣtΣ*. Other kinds of derived nominals can also be regularly pluralized, e.g., participles (a type of deverbal nominal; e.g., *säfi-wotΣtΣ* ‘tailors’ Fulass 1966:50) and instrumental nominals (formed from deverbal nouns, e.g., *mätΣ’tΣ’a-wotΣtΣ* ‘play things’ Fulass 1966:32). We can conclude, then, the fact that irregular plural suffixes impose selectional restrictions on stems is exactly what is expected if they are derived via  $n$ , and the fact that regular plurals do not is exactly as expected if they are derived via Num.

If there truly are two separate sources for plural inflection in Amharic, it is also predicted that, in at least some cases, they could both surface. This prediction is borne out via forms that I will refer to as double plurals.

(21)	<u>Singular</u>	<u>Irregular Plural</u>	<u>Double Plural</u>	
	mämh→r	mämh→r-an	mämh→r-an-otΣtΣ	teacher
	mäzämm→r	mäzämm→r-an	mäzämm→r-an-otΣtΣ	cantor
	ityop'p'→yawī	ityop'p'→yawī-yan	ityop'p'→yawī-yan-otΣtΣ	Ethiopian
	k'al	k'al-at	k'al-at-otΣtΣ	word
	kah→n	kah→n-at	kah→n-at	-otΣtΣ      priest
	mäs'haf	mäs'ah→ft	mäs'ah→ft-otΣtΣ	book
	kokäb	käwak→bt	käwak→bt-otΣtΣ	star
	wäyzäro	wäyzaz→rt	wäyzaz→rt-otΣtΣ	lady, Mrs.

An irregular plural can be pluralized 'again' by adding the regular plural suffix to it. The double plural is productive across all the kinds of irregular plurals<sup>17</sup>, and also does not appear to alter the interpretation, i.e., double plurals have the same standard plural sum interpretation as non-double plurals.

The sheer fact that double plurals exist in Amharic is evidence for a split analysis of number; in a non-split analysis, irregular and regular plural morphology would be in competition for the same 'slot' (probably Num) and could not both surface at the same time (see Section 3.4). However, the double plurals also support more specifically an analysis where irregular plural morphology is on *n* and regular plural morphology is on Num. Consider the fact that the irregular plural morphology is always closer to the root than the regular plural morphology.

- (22) a. k'al-at-otΣtΣ      \*k'al-otΣtΣ-at  
 Root-IrregPl-RegPl
- b. h→s'an-at-otΣtΣ      \*h→s'an-otΣtΣ-at

This makes sense if irregular plural morphology is syntactically closer to the root than regular plural morphology.

- (23)            Num  
                   3  
 Num [+PL]    *n*  
                   -otΣtΣ    3  
                   *n* [+PL]      √K'AL  
                   -at

Num, *n* and the root must all ultimately combine into one complex head (a Morphosyntactic Word in the terminology of Embick 2001). No matter how this is accomplished (whether the root raises to Num, Num lowers to the root, or they meet in the middle), *n* will always be between the root and Num in the resulting adjunction structure. Thus, if irregular plural morphology is on *n*, it is correctly predicted to be realized closer to the root than regular plural morphology. It is possible for this to be accounted for in some other kind of split account in Amharic (perhaps where there were two NumPs), but it would have to be stipulated that one projection was below the other whereas the ordering comes for free in the account advocated for here since the ordering of Num and *n* is set regardless of any plural facts.

Several additional arguments for a split analysis of number have been presented in this section (derivational selection, double plurals, ordering of plural morphemes). I would like to close with some brief discussion of the use of the different plurals in Amharic. Since there can be three different ways to pluralize a

<sup>17</sup> As confirmed in Leslau 1995, my own fieldwork and Google Ethiopia searches.

given noun in Amharic (regular, irregular, and double plural), it is natural to ask how and when the different forms are used. It seems that speakers are capable of generating all the forms for each noun, but sometimes prefer certain forms based on frequency of exposure and/or register. For example, a speaker highly involved with the church more readily accepts irregular plurals (which are often from Ge'ez) than a younger speaker. A speaker who is younger and/or more urban more often accepts regular plurals of words that are conventionally irregularly pluralized (but may comment that such regular plurals would not be acceptable to their parents). Other speakers classify some irregular plurals as formal and some regular plurals as informal (cf. Cohen (1970:71) who states that irregular plurals are used in erudite and even pedantic forms of the language). Speakers sometimes comment that double plurals and regular plurals which they are more hesitant to accept still “do not sound horrible” or “sound OK” but that they “have never heard them before.” In other cases, double plurals and irregular plurals are dubbed equivalent in terms of register and usage. It seems, then, that the best way forward here is to assume that the Amharic plural system can generate all the forms and the particular usage of the forms can be guided by considerations of register, style or by no particular principle whatsoever if the forms are equivalent (see the discussion of Arabic plural alternants in Acquaviva 2008a (203-206) for similar conclusions).

### 3.3.2 Other *n* Accounts

Important support for a split analysis of number in Amharic is found in two accounts that independently argue for a plural feature on *n*: Lecarme 2002, which examines Somali, and Acquaviva 2008a, which adopts a cross-linguistic perspective on idiosyncratic plurals.<sup>18</sup> The Somali plurals examined by Lecarme are a particularly interesting contrast because not only is Somali in the same language family as Amharic (Afro-Asiatic), it is one of the Cushitic languages that is spoken within and near Ethiopia.

The plural system in Somali displays an impressively varied array of morphophonological realizations, but Lecarme (2002) successfully reduces the complexity to a handful of plural morphemes: (accented) *-a*, *-o*, a change in tone, *-yaal* and *-oyin*, of which the latter two are mostly used for derived nominals. Lecarme (2002) argues that all plural formation in Somali is derivational, and in particular, that each plural affix is a *n* that has [+PL] features. The evidence that she adduces to support the analysis is strikingly similar to the evidence discussed above. Plural affixes in Somali select for particular roots, and they can also select for particular stems (roots and derivational affix(es)), just like derivational affixes traditionally and just like irregular plural morphology in Amharic. Plural affixes in Somali are associated with particular genders, and this is also true in Amharic (see Chapter 5).<sup>19</sup> Somali has double plurals, where more than one plural morpheme attaches to the same root. Also, a single noun can often be pluralized using several different affixes (e.g., Noun-Affix 1, Noun-Affix 2, etc.). This is quite similar to how Amharic nominals can all be regularly pluralized and some can take an irregular and double plurals as well.

Lecarme (2002:125) notes that the double plurals and multiple pluralization strategies for one noun show that the plural affixes are not in competition for a single Num node, and I argue this point specifically for Amharic in Section 3.4. However, unlike in Amharic, none of the Somali pluralization strategies seem to be ‘inflectional’ -- none apply to all nominals, none are morphophonologically more regular, etc. Hence, she concludes that all the plurals are *n*'s with different *n*'s for each affix. In contrast, I argue that there is a regular, inflectional plural in Amharic (realized as the suffix *-otΣtΣ*) and only one *n*[+PL] that is realized as different Vocabulary Items depending on context. The larger point here, though, is that plurals that are derived via *n* in Somali share properties with irregular plurals in Amharic.

Acquaviva 2008a investigates the behavior and properties of plurality across languages, dividing plurals into roughly two different kinds: lexical plurals and inflectional plurals. He focuses in particular on the properties of the lexical plurals: plural nominals whose meaning and/or form deviate from standard sum

<sup>18</sup> See also [Section 4.1](#) for extensive discussion of Lowenstamm 2008, a split analysis of Yiddish plurals.

<sup>19</sup> However, there is a careful distinction to be made here. In Somali, every plural affix ‘has’ its own gender and imposes this gender on the nominal. In Amharic, plural affixes have different forms depending on the natural gender of the nominal since, under the analysis developed in Ch.3, natural gender features are in *n* in Amharic. How the analysis of gender in Amharic relates to the analysis of gender in Somali is worth further investigation.

interpretations and/or regular, inflectional morphology in a given language. Note that I will continue to use the term ‘lexical plural’ during this brief discussion but only as a label, and not with any theoretical connotations about the lexicon.

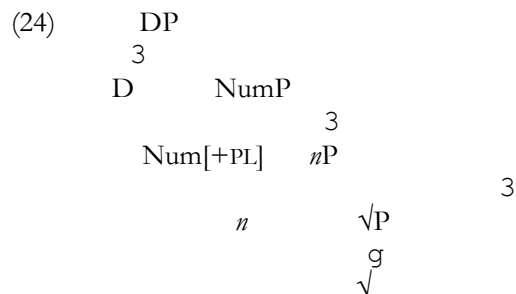
According to the criteria laid out in Acquaviva 2008a, irregular plurals are (probably) lexical in Amharic whereas regular plurals are inflectional.<sup>20</sup> Irregular plurals that involve changes in the stem of the word (e.g., ablaut, prosodic alterations) are considered by Acquaviva to be morphologically lexical in general (see pp. 268-269 and Ch.7). Hence, all of the Amharic irregular plurals that participate in this kind of plural formation (e.g., *känfür* ‘lip,’ *känaf*→*r* ‘lips’) are lexical. Needless to say, regular plurals never participate in such stem alternations. Also, recall that regular plurals are semantically transparent, whereas some irregular plurals display semantic idiosyncracies -- this again correlates with the properties of inflectional and lexical plurals respectively.<sup>21</sup> Finally, the existence of irregular and regular plural alternants for some nouns (without any change in meaning) suggests that at least one of the pluralization strategies is lexical since it does not compete with the other (see Acquaviva 2008a:33ff.).

What is crucial here is Acquaviva’s proposals about the syntax of plurality. He suggests that lexical plurals result from combining *n* with a root, whereas inflectional plurals are the realization of features on Num.<sup>22</sup> His syntactic proposals are very general (there is no exemplification of this system for particular languages), but the impact for the present analysis is clear. The idea that there is a *n*/Num split in Amharic is not only supported by the Amharic-internal evidence discussed above, but it is also compatible with Acquaviva’s conclusions about lexical vs. inflectional plurality across many, many languages. Overall, then, the claim that Amharic irregular plurals are derived via *n*[+PL] is fully compatible with previous accounts of plural features in *n*.

In sum, the Amharic grammar provides a remarkable array of choices for plural inflection: irregular plural (for certain roots), regular plural (for all roots), and double plural (for roots with an irregular plural). It was argued extensively in Sections 3.1 to 3.3 that many of the properties of Amharic plurals are predicted by a split analysis of number: irregular plurals are derived by *n*[+PL] in combination with a root and regular plurals are derived by the combination of Num with an already-derived word (*n*P).

### 3.4 Non-Split Analysis

In this section, I develop a non-split analysis of Amharic number and detail exactly how it falls short compared to a split analysis. The structure of a plural Amharic nominal under this approach is in (24).



<sup>20</sup> Acquaviva discusses in depth broken plurals in Arabic, which are somewhat similar to Amharic irregular plurals; see Section 3.5 for some comments on the Arabic data and on Acquaviva’s analysis.

<sup>21</sup> Acquaviva (2008: Ch.4) carefully delineates the readings that lexical plurals may have. More detailed work on the semantics of irregular plurals in Amharic is needed to classify their semantic idiosyncracies in Acquaviva’s typology, but the fact that they have idiosyncracies at all signifies their lexicality.

<sup>22</sup> Technically, Acquaviva follows Borer (2005) in having DivP house number inflection. Note also that it is not entirely clear how the morphological and semantic aspects of lexicality are related to this syntactic representation. Acquaviva 2008 as a whole is mostly a descriptive study with a few comments about possible formalizations of the results, and more detailed syntactic theories of lexical plurality are deliberately left for future work (Acquaviva 2008:273-274).

Plural number is expressed morphologically only through the spell-out of Num[+PL]. As in several Distributed Morphology accounts of number inflection (Embick and Noyer 2007, Embick 2008), there are multiple Vocabulary Items in competition to realize Num[+PL]. The ‘regular’ plural affix  $-ot\Sigma t\Sigma$  is the default Vocabulary Item, i.e., there are no conditions on its insertion.

$$(25) \quad \text{Num, [+PL]} \leftrightarrow -ot\Sigma t\Sigma$$

However, there are also ‘irregular’ plural affixes that compete with  $-ot\Sigma t\Sigma$  for insertion. The insertion of these affixes is conditioned by the identity of the root. For example, the  $-at$  suffix is inserted only in the context of the roots  $k'al$ ,  $wär$ ,  $kab \rightarrow n$ , etc. Some examples of the Vocabulary Items for these irregular plural affixes under this approach are in (26).<sup>23</sup>

$$(26) \quad \begin{array}{l} \text{a. Num, [+PL]} \leftrightarrow -at / \{ \sqrt{K'AL}, \sqrt{WÄR}, \sqrt{KAH \rightarrow N \dots} \} \\ \text{b. Num, [+PL]} \leftrightarrow \text{ää, } -tat / \sqrt{N \rightarrow GUS} \\ \text{c. Num, [+PL]} \leftrightarrow \text{äa} \rightarrow \{ \sqrt{KÄNFÄR}, \sqrt{D \rightarrow NG \rightarrow L \dots} \} \end{array}$$

The Vocabulary Items in (26) have more specific conditions on their insertion than the ‘regular’ plural affix in (25), so when their conditions are met, they will be inserted instead of (25) (as per the Panini/Elsewhere Principle).<sup>24</sup>

A key aspect of a non-split analysis is the competition for insertion among the Vocabulary Items that can realize the feature bundle Num, [+PL]. This makes certain predictions that are borne out in well-known plural systems like English. For example, in English, a noun that is irregularly pluralized (e.g., *foot*, *child*, *woman*, *tooth*, *sheep*, *criterion*, *analysis*) cannot be regularly pluralized instead (*\*foots*, *\*childs*, *\*tooths*, *\*womans*, *\*sheeps*, *\*criterions*, *\*analyseses*).<sup>25</sup> This would violate the Panini/Elsewhere Principle in that a less specific Vocabulary Item (regular plural) would be inserted where the context is met for the insertion of a more specific Vocabulary Item (irregular plural). Also, a competition-based account of plural inflection predicts that irregular and regular plural morphology cannot be realized at the same time, as is true in English (*\*feets*, *\*childrens*, *\*teeths*, *\*womens*, *\*sheeps*, *\*criterias*, *\*analyseses*).<sup>26</sup> There is only one ‘slot’ for plural inflection that irregular and regular plural morphology both compete for (see Embick and Marantz 2008 for more detailed discussion of similar ‘blocking’ effects in Distributed Morphology).<sup>27</sup>

<sup>23</sup> Another approach here would be to have Num,[+PL] be spelled out as a null morpheme ( $\emptyset$ ) in the context of roots that undergo ablaut/prosodic alterations. A readjustment rule could subsequently adjust the form of the stem. See Noyer 1997.

<sup>24</sup> It may seem like Num and the root are not in a local-enough relationship for the insertion of Num to be conditioned by the root. However, in Embick 2008, Num undergoes Vocabulary Insertion during the same cycle as the root, specifically, the cycle triggered by the insertion of D (which spells out any cyclic domains within D -- i.e., *nP* which contains the root -- and triggers VI for any non-cyclic nodes in-between D and that cyclic domain -- i.e., Num).

<sup>25</sup> This purportedly occurs in English when the regular plural has a different meaning than the nominal that is irregularly pluralized, e.g. *mouses* ‘computer pointers,’ *oxes* ‘strong, brutish men.’ These cases are substantially different from multiple plurals for the same nominal in Amharic where in general the different plurals have the same meaning (or, in those cases where the meaning varies, it is the **irregular** plural that has an **optional** special meaning and not the regular one).

<sup>26</sup> Again, there is an exception here for nouns like *schematas*, but it seems quite plausible that in this case an irregular plural suffix (e.g.,  $-ta$ ) has been reanalyzed as part of the root.

<sup>27</sup> Certain nominals in English can have two plurals -- one irregular plural which is formal and one regular plural which is less formal (compare *formulae* and *formulas*). Acquaviva (2008:34) suggests that these plurals are not ‘lexical plurals;’ in the terms used here, this means they are both realizations of Num[+PL] and the insertion rules for Num are guided by sociolinguistic considerations. It was noted in Section 3.3 that, in some cases, the different plural forms for a given Amharic nominal are associated with different levels of formality. Could it be that a non-split analysis is correct for the Amharic plural system if the insertion of Num can be conditioned by factors like register?

I do not believe so, for the following reasons. First, not all of the irregular plurals are considered more formal than the regular plurals. The consultant who explicitly designated certain plurals as formal only did so for a small subset of the irregulars, and the younger consultant who disliked most of the irregulars still found several perfectly acceptable

However, it was shown above that both of these predictions are untrue for Amharic. All nominals can be regularly pluralized, regardless of whether they can also be irregularly pluralized (see (13)). Also, Amharic has double plurals where both irregular and regular morphology are expressed on the same nominal stem (see (21)). This is strong evidence that irregular and regular plural inflection are not in competition in Amharic, i.e., they correspond to separate feature bundles which in turn are realized by separate sets of Vocabulary Items.

One could attempt to treat Amharic in a competition-based analysis by appealing to some kind of post-syntactic operation. The operation would have to copy the Num[+PL] feature bundle into an additional node, thus providing two feature bundles that could correspond to two separate Vocabulary Items. This would result in a double plural. However, this approach does not straightforwardly explain why one of the feature bundles always corresponds to a regular plural and one to an irregular plural. Moreover, the Pāṇinian Principle/Elsewhere Condition would remain a problem since there would still be no way to ensure that all nominals could be regularly pluralized.

Also, the postsyntactic ‘copying’ operation would be ad hoc -- no such operation is part of the standard repertory of post-syntactic operations in Distributed Morphology. The operation Fission (Noyer 1997, Halle 1997) is perhaps the most similar to what is needed since it splits the features of a single morpheme into two separate terminal nodes. However, Fission is not useful because it cannot copy a feature into a new terminal node; it can only move a feature from one terminal node to another. Hence, there would always be only one [+PL] feature. Indeed, in Noyer 1997, fission is specifically defined so as to **prevent** any given feature from being realized in two different positions (see the discussion of ‘discontinuous bleeding’ in Noyer 1997:6ff.).<sup>28</sup>

Finally, there are some additional differences between irregular plurals and regular plurals that a competition-based analysis does not handle well. Certain irregular plurals take different forms according to gender (see Chapter 5) and the competition analysis offers no insight into why this might be. Also, certain irregular plurals trigger semantically idiosyncratic interpretations (see (14)). A non-split analysis again does not provide a reason for why the irregular plurals would be singled out here, whereas a *n*/Num analysis can draw on independent evidence that *n*P is a domain of semantic idiosyncrasy. Finally, there are the selectional facts whereby irregular plurals can select a particular stem to attach to and regular plurals are not picky. Essentially, the irregular plurals are treated separately in Amharic w.r.t semantically idiosyncratic interpretations and selection, but they are not differentiated in any way in which these differences could easily be captured in a non-split analysis.

Overall, then, the most promising way forward at this point is to treat irregular and regular plural morphology in Amharic as stemming from two separate morphemes, i.e., two separate bundles of features, and that those morphemes are *n* and Num. Many details remain to be fleshed out for the split analysis, though (especially the relationship between *n* and Num), and these are addressed in Section 4. First though, a brief digression on Arabic plurals is necessary.

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(for presumably high frequency nominals like *book*). Thus, not all plural doublets can be distinguished by sociolinguistic factors. Also, the double plurals cannot be forgotten -- it is unclear if their use is guided by sociolinguistic factors at all, and they are of course very difficult to account for under a non-split analysis of meaning. Finally, there is the additional evidence that irregular plurals are associated with *n*: semantic idiosyncrasy, gender distinctions and closeness to the stem in a double plural. Given all these considerations, I think that a purely sociolinguistic, non-split account of Amharic number would not be successful.

<sup>28</sup> In Müller 2006, a new post-syntactic operation is proposed to account for ‘multiple exponence,’ e.g., in German *kind-er-n* ‘children (dative pl.)’ where *-er* expresses plural and *-n* expresses dative **and** plural (i.e., plural is expressed twice). The operation is called Enrichment and can add a copy of a feature (e.g., [+PL]) to the post-syntactic representation under certain conditions (it is unclear where exactly the new copy is placed in the representation). I do not comment here on the problem of multiple exponence, which is certainly related to Amharic double plurals but a complex issue in its own right (see e.g., Peterson 1994, Noyer 1997, Inkelas 2008). However, simply copying a [+PL] feature does not help with the Amharic data in that it does not remove the problem that all plurals can regularly pluralize (as noted above) and it raises new problems as well. For example, it is unclear how to ensure that of the two [+PL] features that would result from Enrichment, one must be spelled out as irregular (and that one is closer to the nominal) and one must be spelled out as regular. This is easily done in the *n*/Num split analysis.



### 3.5 Digression: Arabic Plurals

The plural system of Arabic has been extensively described and analyzed, especially the so-called ‘broken plurals’ (see e.g., McCarthy and Prince 1990, McCarthy 1997, Ojeda 1992, Ratcliffe 1998, Zabbal 2002, and see also Acquaviva 2008a: Ch.7 for an overview of the literature and philological references). At a basic descriptive level, the Arabic plural system seems similar to the Amharic plural system since it has an opposition between regular, suffixed plurals (sound plurals) and irregular plurals that trigger stem changes (broken plurals). In this section, I briefly discuss the empirical similarities and differences between the two systems, and consider how they should be comparatively analyzed. I conclude with some speculation on why the plural systems in these two Semitic languages diverged.

In the literature on the Arabic plural system, there are two main morphological categories: sound plurals and broken plurals. Sound plurals are formed via suffixation.

- |      |   |  |                  |
|------|---|--|------------------|
| (27) | a. as-saariq-u<br>DEF-thief-NOM<br>the thief<br>(Acquaviva 2008a:199) | b. as-saariq-uuna<br>DEF-thief-PL<br>the thieves | Classical Arabic |
|------|---|--|------------------|

In contrast, broken plurals are formed by ablaut (altering the vowels) and prosodic changes from the singular stem.

- |      |   |  |                                     |   |
|------|---|--|-------------------------------------|---|
| (28) | <u>Singular</u><br>kitaab<br>rajul<br>qadam | <u>Broken Plural</u><br>kutub<br>rijaal<br>'aqdaam | <u>Gloss</u><br>book<br>man<br>foot | Classical Arabic<br><br><br>(Acquaviva 2008a:200) |
|------|---|--|-------------------------------------|---|

The relationship between the form of the broken plural and the singular stem may seem arbitrary, but research on the prosody of these forms has demonstrated that the relationship is predictable, at least in the majority of cases (see e.g., McCarthy and Prince 1990).

Another major strand of research on the Arabic plural system has focused on its particularly intricate semantics, with separate oppositions not just between singular and plural forms but also collective and singulative forms (see especially Ojeda 1992, Zabbal 2002, Acquaviva 2008a). Broken plurals are often associated with collective interpretations, but the association is by no means required. It is clear that Amharic lacks a collective/singulative opposition that is as systematic as the opposition in Arabic, but the existence of (allegedly) singulative forms for certain kinship terms (see fn. 1) and the collective readings associated with certain irregular plurals (see (16) and (17)) indicate a certain affinity and make this a productive area for future empirical investigation in Amharic.

Double plurals are permitted in the plural system of Arabic, although they seem to not be generated as productively as in Amharic. Care must be taken to distinguish a genuine double plural from a former broken plural that has been re-lexicalized as a singular noun and then pluralized regularly (see discussion in Acquaviva 2008a:208). There are two types of double plurals in Arabic: broken plurals can take sound plural suffixes ((29)a), and already broken plurals that undergo broken pluralization again ((29)b).

- |      |  |
|------|--|
| (29) | a. jamal ‘camel’ → jimaal (broken plural) → jimaal-aat (broken and sound plural)     |
|      | b. kalb ‘dog’ → ’aklub (broken plural) → ’akaalib (broken plural from broken plural) |

To the best of my knowledge, Amharic double plurals are always of type (29)a where a suffix is added to an irregular plural.

Zabbal (2002) and Acquaviva (2008a) develop morphosyntactic analyses of the Arabic plural system that explore where plural features are located. Acquaviva (2008a: Ch.7) argues extensively that the abstract syntactic representation for a broken and a sound plural nominal is the same; both contain a plural feature,

probably in a Num head (the locus of ‘inflectional number’ for Acquaviva; see [Section 3.3.1](#)). Zabbal (2002:64ff.) similarly argues that most broken plurals are derived via a plural feature in Num. The difference in how the plural feature is realized for sound and broken plurals is purely a morphological phenomenon and does not relate to the syntactic structure. For broken plurals that are interpreted as group plurals, Zabbal (2002) proposes that the plural morphology there is the realization of a group operator that is syntactically located between Num and the root.

As for the double plurals, Acquaviva (2008a) does not propose a formal analysis, but he speculates that the double plurals in (29)a are actually ‘single’ plurals which have a primary exponence (the suffix) and a secondary exponence (the stem change) for plurality. A way to make this intuition precise is to use readjustment rules. In the context of certain roots, Num is realized as a suffix, but a readjustment rule also applies that changes the shape of the stem. In this way, a ‘double’ morphological plural can be generated from a single plural feature.<sup>29</sup> With respect to the double plurals in (29)b, it is less clear to me exactly how they are to be derived, and more morphosyntactically-focused research on Arabic is needed to establish the analysis here.

In any event, it is necessary to ask whether Amharic can be accounted for in a similar fashion to Arabic. The main similarities are broken plurals and double plurals. However, one crucial difference is that in Amharic all nouns can be regularly pluralized whereas it is not the case that every nominal has a sound plural in Arabic (M.A. Tucker, p.c.). This makes it difficult for any analysis of Amharic to be like Zabbal’s (2002) or Acquaviva’s (2008a) analysis of Arabic where plural features are (for the most part) always on Num -- not split (see [Section 3.4](#)).

The jury is unfortunately out on Arabic double plurals since they have not yet been fully analyzed from a morphosyntactic perspective. However, even just considering my ad hoc formalization of Acquaviva’s ideas above, double plurals in Amharic seem less likely to be accounted for using Arabic readjustment rules. Recall that some double plurals do not involve stem changes, e.g. *k’al-at-ot*  $\Sigma\Gamma\Sigma$  ‘words.’ Readjustment rules were originally intended to effect unpredictable changes in stem form (e.g., *destroy* → *destruct-* in nominal contexts), and not to suffix material to an intact stem.

It will have to remain unclear, then, to what extent Arabic and Amharic plural systems can (or should) be analyzed in a similar way, although the fact that not all nominals have a regular plural in Arabic seems to indicate the systems might be more different they seem. However, it is worth considering from a general perspective why the systems are similar at all.

Some of the broad similarities between the Amharic and Arabic plural systems are surely due to the familial relationship between the two languages -- most (if not all) Semitic (and Afroasiatic) languages have broken plurals to some extent because most (if not all) Semitic languages use root and pattern morphology for the expression of grammatical categories. If we take the Arabic plural system to be typical of mainstream Semitic, we might ask why Amharic diverged from having number be on Num (a purely inflectional category whose realization involves stem changes) to a hybrid system where number is partially on Num and partially on *n*. I suggest that the answer can be found in [Section 3.4.2](#) above. Recall that in Somali, all number is derived via a plural feature on *n* (according to Lecarme 2002). The influence of Cushitic languages on the Ethio-Semitic languages is well-known (e.g., it is supposedly why many Ethio-Semitic languages are head-final) and I suggest that the plural system may be simply another instance of this influence. The *n*-based Cushitic plural system collided with the Num-based system of Amharic and a mixture resulted. This is of course speculation, and other Cushitic and Ethio-Semitic languages must be investigated before the hypothesis can be confirmed. Nevertheless, it offers a tantalizing explanation for how the beautifully split Amharic plural system developed.

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<sup>29</sup> It is unclear to me whether Zabbal 2002 can successfully generate the double plurals. In Zabbal 2002, all double plurals are assumed to be associated with group interpretations, and hence there can be two separate heads for the separate realizations of plurality (the group operator and Num). However, not all double plurals are in fact associated with group interpretations, as Acquaviva (2008) demonstrates.

## 4 THE DETAILS OF THE SPLIT ANALYSIS

In the previous section, it was shown that a split analysis predicts many of the contrasts between irregular and regular plurals. In this section, the goal is to explicate the details of the split analysis, particularly in terms of the relationship between Num and *n*. The main observation to be captured is that regular, irregular and double plurals are all semantically identical in Amharic, despite the fact that they vary in how exactly (and how many) plural features are realized.

I first examine two approaches where the plural features on *n* and Num are independent from each other, i.e., *n* and Num can be freely combined in the syntax whatever their features. Some separate mechanism then ensures the correct interpretation and morphological realization of the plural features if necessary. The first of these independent approaches is the split analysis of number developed for Yiddish in Lowenstamm 2008. In Section 4.1, I show how this analysis does not generalize well to Amharic and how it has difficulties predicting the semantic uniformity of plurals derived from *n* and Num. The second independent approach I develop (Section 4.2) is based on the Amharic facts directly, and is more successful in capturing the semantic uniformity. However, it is less satisfactory due to the baroque nature of the mechanisms required to generate all the plurals morphologically.

Finally, in Section 4.3, I develop an approach that uses agreement to mediate the relationship between Num and *n*, and thus makes the plural features on *n* and Num dependent on one another. The agreement analysis avoids the pitfalls of the independent analyses, successfully predicting semantic uniformity and morphological variation. It also is shown to make interesting predictions about the PF consequences of feature sharing across languages.

Two additional analyses were mentioned above that rely (at least partially) on a plural feature on *n*, namely, Lecarme 2002 and Acquaviva 2008a. However, these analyses are not returned to in this section for several reasons. In Lecarme 2002, it is proposed that there is no NumP in the syntax of Somali, so there is clearly no relationship between Num and *n* and nothing to compare a potential analysis of the Amharic facts to. Acquaviva 2008a is primarily a descriptive study of idiosyncratic plural forms across languages, not a formal, syntactic analysis of idiosyncratic plurality.<sup>30</sup> Acquaviva suggests that when plurality is encoded on *n*, Num “remains null if morphologically dispensable” (271), but he remains uncommitted as to how this would be accomplished technically. In contrast, the goal of this section is to go through the painstaking details of the relationship between *n* and Num.

### 4.1 Lowenstamm 2008

Lowenstamm 2008 (henceforth L08) is one of the few other split analyses of number in the literature, and it contains an important treatment of double plurals in Yiddish. However, it does not generalize well to Amharic, predicting that *n* in Amharic should not have plural features at all. Moreover, it is not fully explicit about the mechanisms needed for the proper semantic interpretation of the plural features on *n* and Num.

Besides just investigating plurals in Yiddish, L08 also proposes a typology of gender systems, and the typology predicts that the availability of *n*[+PL] in the grammar of a language depends on (i) whether the language has gender distinctions in the plural and (ii) how many genders the language has. In the proposed typology, languages which lack gender distinctions in the plural necessarily have four types of nominals. The first three types are masculine, feminine, and neuter, all of which are inherently singular and formed via the combination of a root with *n*[-PL]. However, the fourth type of nominal is inherently plural -- this type of nominal is outside of the gender system and hence does not show gender distinctions.<sup>31</sup> The inherently plural nominals are derived from the combination of a root with *n*[+PL].

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<sup>30</sup> There is some brief discussion of possible formal analyses, including the lexical/inflectional *n*/Num correlation discussed in [Section 3.3.2](#).

<sup>31</sup> Lowenstamm ties the distinctions here to a class feature which is associated directly with gender: inherently singular nominals are [+Class] (and thus have gender) but inherently plural nominals are [-Class] (and thus lack gender). In languages where Class is ‘active’ like Yiddish, plurals have no gender distinctions. In languages like Spanish, where Class is not active, plurals can have gender distinctions since they do not lack Class. The Class feature is intended to be similar to class in e.g. Bantu.

The typology is supported by evidence from Yiddish, which does not show gender distinctions in the plural, has three genders and also presents some independent evidence for  $n[+PL]$  (e.g., it has double plurals; see immediately below). Amharic, however, does not meet either of L08's criteria for having  $n[+PL]$ : it has only two genders (masculine and feminine) and its nominals retain gender when pluralized (see [Chapters 3 and 5](#)). Nevertheless, as detailed in [Section 3](#), there is substantial evidence that  $n$  has a plural feature in Amharic. This is the first indication that L08 is not the right style of analysis for Amharic plurals.

I now turn to the specific analysis of the Yiddish plural system developed in L08, looking at regular plurals, irregular plurals and double plurals in turn. The analysis relies on  $n$  and Num having independent plural features, but leaves many issues unresolved concerning the morphology and semantics of pluralization. In L08, a regular plural in Yiddish is formed by the combination of  $n[-PL]$  and Num[+PL]. The derivation of the word  $moyx \leftrightarrow s$  'brains' is in (30).

$$(30) \quad \begin{array}{c} \text{NumP} \\ \quad 3 \\ \text{Num}[+PL] \quad nP \\ \qquad \qquad 3 \\ \qquad \quad n[-PL] \quad \sqrt{P} \\ \qquad \quad \sqrt{MOYX} \end{array}$$

Abstracting away from some details,  $nP$  raises into the specifier of NumP and Num[+PL] is spelled out as  $-s$ . This results in  $moyx \leftrightarrow s$  'brains.'

The derivation raises some questions independent of its plausibility when transferred over to the Amharic facts. First, it is unclear what happens morphologically to  $n[-PL]$ . Lowenstamm (2008:128) states that the spell-out of  $n[-PL]$  is "inhibited" by Num[+PL], but does not propose a mechanism whereby this can be enforced or a specific motivation beyond the vague implication that no more than one number feature can be spelled out (or that Num's number specification takes precedence over  $n$ ). Having more than one number feature is more of a concern to the semantics than the morphology, but it is not discussed in L08 what happens in the semantics for a structure like (30) -- does  $n[-PL]$  not trigger any singular meaning? As will become clear below, its counterpart  $n[+PL]$  certainly is interpreted. Is there some stipulation that when both are present, the number feature of Num takes precedence? Such open questions weaken L08, and render it less satisfactory than the two analyses below.<sup>32</sup>

Moving on to irregular plurals, L08 posits that they are always formed via the combination of  $n[+PL]$  and a root. To take a specific example from Yiddish, the nominal  $xaz \leftrightarrow r$  'pig' has an irregular plural  $xazeyr \leftrightarrow m$ . Its proposed structure is in (32).

- (31) a. der  $xaz \leftrightarrow r$  'the pig'  
 b. di  $xazeyr \leftrightarrow m$  'the pigs' (irregular plural)  
 (Lowenstamm 2008:117, (20))

$$(32) \quad \begin{array}{c} nP \\ \quad 3 \\ \quad n[+PL] \quad \sqrt{P} \\ \quad \sqrt{XAZEYR} \end{array}$$

In (32),  $n[+PL]$  is spelled out as  $-m$ . Crucially, no NumP is merged above  $nP[+PL]$ . This has a positive effect in that it prevents any semantic or morphological confusion about multiple plural features -- there is no plural feature on Num to be interpreted or morphologically realized. However, the lack of NumP also has syntactic consequences which are not explored in L08. In many languages, Num plays an important syntactic role in the DP, e.g., by hosting genitive phrases (see e.g. Ritter 1991, see also Acquaviva 2008a:271 who assumes

<sup>32</sup> Also, it is unclear why gender is not retained in a regular plural since it is formed from  $n[-PL]$ , which is compatible with a [+Class] feature and thus can show gender distinctions.

that Num must be present for syntactic purposes even if *n* hosts the plural feature). If Num plays any sort of syntactic role in the Yiddish DP, it is less likely that it is prevented from merging whenever there is *n*[+PL] (unless the inherently plural nominals display syntactic effects that would result from Num not being there, which would be an interesting result). Moreover, there is indirect evidence that NumP is required syntactically in Amharic, although the argument requires that much empirical evidence be laid out and has thus been moved to a separate section: 4.1.1.

Like Amharic, Yiddish also has double plurals, but unlike Amharic, they are crucially only licensed in the context of diminutives.

- (33) a. *der xaz* ↔ *r*                    ‘the pig’  
 b. *dos xaz* ↔ *r-l*                    ‘the little pig’ (diminutive)  
 c. *di xazeyr* ↔ *m*                    ‘the pigs’ (irregular plural)  
 d. *di xazeyr* ↔ *m-l* ↔ *x*            ‘the little pigs’ (diminutive double plural)  
 (Lowenstamm 2008:117, (20))

The double plurals are proposed to involve Num in L08, but the analysis is again unclear on the semantics and difficult to generalize to Amharic. The derivation of a double plural has the following steps: (i) start with (32), (ii) merge a diminutive phrase whose head Dim takes *n*P as a complement, (iii) merge *n*[-PL] which takes DimP as a complement, because otherwise the nominal cannot be “integrated into syntactic structure” (Lowenstamm 2008:129), (iv) NumP[+PL] is merged and takes *n*[-PL]P as its complement. Various movements occur after this structure is in place in order to generate the correct order of morphemes, but the base structure is in (34).

- (34)
- |          |            |                |      |                |        |
|----------|------------|----------------|------|----------------|--------|
| NumP     |            |                |      |                |        |
|          | 3          |                |      |                |        |
| Num[+PL] | <i>n</i> P |                |      |                |        |
|          |            | 3              |      |                |        |
|          |            | <i>n</i> [-PL] | DimP |                |        |
|          |            |                | 3    |                |        |
|          |            |                | Dim  | <i>n</i> P     |        |
|          |            |                |      | 3              |        |
|          |            |                |      | <i>n</i> [+PL] | √P     |
|          |            |                |      |                | XAZEYR |

*n*[+PL] combines with √XAZEYR to form *xazeyr* ↔ *m*, the diminutive head is spelled out as *-l* and Num[+PL] is spelled out as *-* ↔ *x*, resulting in the nominal *xazeyr* ↔ *m-l* ↔ *x*.

The connection between diminutives and double plurals is such that you cannot have a double plural without a diminutive also present, which is a good result for Yiddish. However, it is of course not a good result for Amharic, where double plurals do not require diminutizing the nominal first. In this sense, L08 cannot generate Amharic double plurals since Num never selects directly for *n*[+PL]. Moreover, it is again unclear how (34) is interpreted. Double plurals are synonymous with regular plurals in Yiddish (except for the diminutive interpretation), but there are two [+PL] features and one [-PL] feature in (34) -- it is not obvious how they generate a typical plural interpretation.

In conclusion, L08 cannot be used to explicate the split analysis of Amharic plurals developed in Section 3. It has some analysis-internal shortcomings and it has difficulty with the Amharic facts, predicting that Amharic should not have *n*[+PL] in the first place, and preventing double plurals from being generated without diminutive morphology also being present.

#### 4.1.1 Digression: NumP in Amharic

In L08, the relationship between *n*[+PL] and Num is simple: Num is simply not merged for irregular plurals formed through *n*[+PL]. Although this cannot be the case for all Amharic plurals (or else there would

be no double plurals), it is at least plausible that in some cases Num is not merged. In this section, I argue that this cannot be the case, i.e., NumP must be present in every nominal in Amharic. The facts indicate there must be at least three levels of projection within Amharic DP ([XP[YP[ZP]]]), and I argue that the three projections are best identified as [DP[NumP[nP]]].

I begin with some basic facts about the order of phrasal constituents in the Amharic DP (see also [Chapter 1, Section 2.2](#)). First, possessors typically precede adjectives.

- (35) yä-G→rma t→ll→k' bet  
 of-Girma big house  
 Girma's big house  
**Possessor > Adj**

However, relative clauses precede possessors.

- (36) yä-hed-atΣτΣ---→w yä-G→rma →h→t  
 C-go.PF-3FS-DEF of-Tigist sister  
 Girma's sister who left (restrictive interpretation)  
**Relative Clause > Possessor**

When all three are present, the order can be relative clauses > possessor > adjective.

- (37) addis abäba yämm→t-norä-w yä-G→rma rädZdZim →h→t  
 Addis Ababa C-3FS-live.IMPF-DEF of-Girma tall sister  
 Girma's tall sister who lives in Addis Ababa  
**Relative Clause > Possessor > Adj**

The ordering here can be affected by other factors. For example, a “heavy” possessor can precede a “light” relative clause.

- (38) [yä-t'→nt yä-roman tarik]<sub>poss</sub> [yä-täw-ä-w]<sub>RC</sub> tämari  
 of-past of-Roman<sup>33</sup> history C-left.PF-3MS-DEF student  
 (Context: talking about a party): the student of ancient Roman history who left (the party)

In (39), the possessor is three words whereas the relative clause is one word (I admit this is a rough measure of heaviness), and the possessor may precede the relative clause, i.e., the possessor might be extraposed.<sup>34</sup> However, when the possessor and the relative clause are of equal heaviness (one word each), the relative clause precedes the possessor, as in (36). I will thus take relative clause > possessor as the base order.

Another factor that can disrupt the order is that adjectives can front to the left edge of the DP if they are focused (as will be discussed in detail below).<sup>35</sup> However, if there is no focus on the adjective and if heaviness is equal across all categories, the basic order of phrasal constituents in the Amharic DP is as in (39).

- (39) Relative Clause > Possessor > AP > nP ( $n + \sqrt{\quad} = N$ )

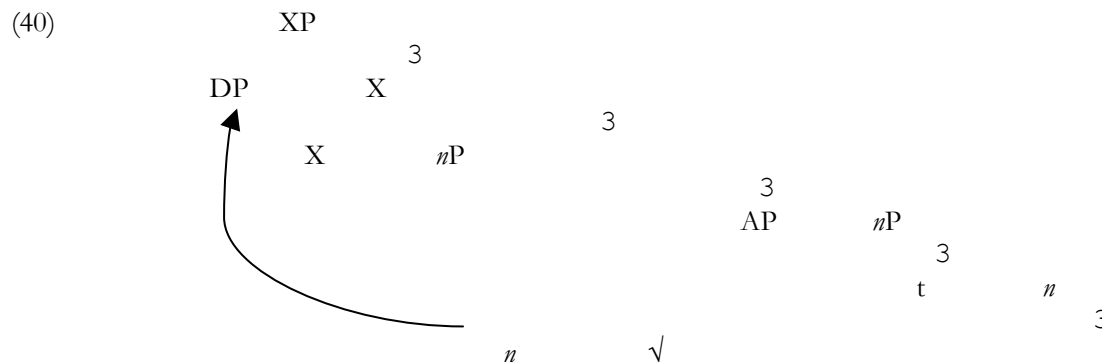
In order to see how NumP fits in, it is necessary to make some basic assumptions about the structure of the Amharic DP. I assume that possessors are initially merged as the specifier of nP since they are

<sup>33</sup> It is unclear to me why Rome is *roman* and not just *rom*, but this is what the consultant reported. It may be that *roman tarik* is treated as a compound here.

<sup>34</sup> Whether the possessor **must** be extraposed is an interesting question that deserves fuller exploration elsewhere.

<sup>35</sup> Informants also occasionally place the adjective in intermediate positions, e.g. between the relative clause and possessor. It may be that in this case, the relative clause has extraposed to adjoin to DP and the adjective has raised to Spec,DP for focus, but the facts must be investigated more to confirm this hypothesis.

arguments of the nominal, analogous to free (i.e., non-construct) genitives in Hebrew (Ritter 1991). I also assume that adjectives are either adjoined to *nP* (the classic analysis) or in the specifier of some functional head immediately above *nP* (Cinque 1994 *inter alia*). Since possessors precede adjectives, the possessor must move out of *nP* to a specifier position of some functional head: call it XP. (Note that I will represent the adjectives in the trees below as adjuncts, but nothing hinges on this.)



It has been proposed and argued for in a variety of languages at least since Szabolcsi 1983 that a possessor moves out of the ‘lexical’ NP where it is originally merged into a higher functional projection, so this movement is relatively uncontroversial.<sup>36</sup>

I assume that relative clauses are adjuncts, i.e., that they are not head-raising (Kayne 1994, Bianchi 2000, 2001). There are still many open questions about the syntax of a head-raising approach to relative clauses (see e.g., Borsley 1997), and Amharic is not a language in which such questions can be ignored. Several arguments against head-raising relative clauses in Amharic are advanced in Demeke 2001 (and the problematic analysis of Amharic relative clauses in Kayne 1994 is discussed), and I assume that relative clauses are adjuncts henceforth. Since relative clauses precede possessors, and they are adjuncts, it can be concluded that they must be adjoined to XP in (40) or a projection higher than XP.

Finally, I would like to return to adjective fronting, mentioned briefly above. Definite-marked adjectives can ‘front’ to a position preceding possessors and preceding relative clauses, probably when focused.

(41) t→ll→k’-u yä-G→rma bet  
big-DEF of-Girma house  
Girma’s **big** house

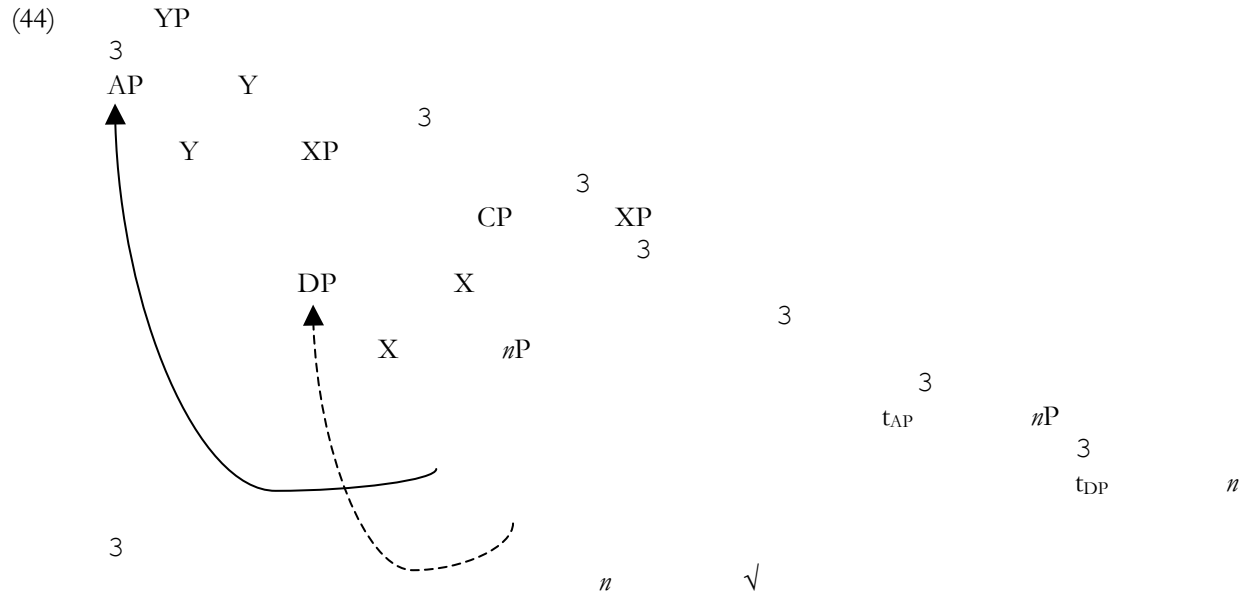
(42) k’äyy-u b→zu gänzäb y-awät’t’a-bbät mäkina  
red-DEF a.lot money C-cost.PF-in.it car  
the **red** car which cost a lot of money

The adjective must front to a specifier position, not a head position, since the entire AP moves, e.g., a degree element like *very* moves with it.

<sup>36</sup> I am glossing over an important issue here -- the fact that Amharic only has one possessivization strategy and it is prepositional. Much of the work that has been done on possessor movement has been done on languages with two strategies (one genitive, one prepositional) and it is usually assumed that it is non-prepositional possessors that move. Also, many Amharic ‘possessors’ have a much looser connection with the head noun (e.g., they indicate material), like prepositional possessors in general (*a match of gold*), and it is unclear whether these more loosely connected possessors have correspondingly different syntax.

- (43) *bät'am t→ll→k'-u yä-G→rma bet*  
 very big-DEF of-Girma house  
 Girma's very big house

Therefore, there is some additional projection above XP (which houses the possessor), and the adjective fronts to its specifier. Call this projection YP.



Basic assumptions about possessors and relative clauses, combined with data about the order of phrasal constituents, results in a nominal phrase that must have at least three levels of projection: one to host the fronted adjective, one to host the possessor and one to host the root+n complex. The question now is what the mystery projections XP and YP actually are. I compare two proposals.

- (45) Proposal 1: YP = FocusP, XP = DP  
 Proposal 2: YP = DP, XP = NumP

Under Proposal 1, the adjective fronts to the specifier of a FocusP (perhaps analogous to the information structure projections above CP in the clause). Possessors move to the specifier of DP and relative clauses adjoin to DP. Under Proposal 2, the adjective fronts to the specifier of DP. Possessors move to Spec,NumP and relative clauses adjoin to NumP. I argue that Proposal 2 is correct for two main reasons: (i) it is compatible with the analysis of definite marking developed in Chapter 2, and (ii) it is supported by independent work on other Semitic languages and Amharic.

Recall from Chapter 2 that the definite marker attaches to relative clauses.

- (46) *yä-särräk'-ä-w l→dZ*  
 C-steal.PF-3MS-DEF child  
 the child who stole

This was accounted for by having the definite marker undergo Local Dislocation, and by assuming that relative clauses (as phases) are impenetrable at PF. It follows that the definite marker cannot attach within the relative clause itself and undergoes Local Dislocation with the entire CP.



(47) [-u \* [yasarak<sup>2</sup>ä] \* l→dZ] → [ [yasarak<sup>2</sup>ä]-u \* bet]<sup>37</sup>

This general approach (Local Dislocation) predicts the definite marking patterns across a range of phenomena. However, under Proposal 1, this approach can no longer be tenable for relative clauses. Relative clauses are adjoined to DP under Proposal 1, which will cause them to be linearized before the definite article (i.e., D).

(48)

DP				→	[CP * D * ...]
3					
CP	DP				
		3			
		D	...		

It may seem that the definite article could simply ‘lean’ leftwards and thus attach to the relative clause. However, recall that DP is a phase, and its spell-out domain is the material from the phase head (D) downwards. Since the relative clause is adjoined to DP, it is not part of the spell-out domain of DP. Hence, when the definite marker is spelled out, the relative clause is not available at PF at the same time to act as a host for the definite marker. The relative clause and the definite marker are part of different spell-out domains and thus cannot be combined using Local Dislocation in a way that will predict the facts. Under Proposal 2, though, the Local Dislocation analysis of definite marking is easily maintained.

(49)

	DP				
	3				
D	NumP			→	[D * CP ...]
		3			
	CP	NumP			
			...		

Since the relative clause is adjoined to NumP, it is below D and thus will be linearized to the right of D. This is exactly what is needed for Local Dislocation to occur. Hence, Proposal 1 is less preferred in that it is unable to predict definite marking in relative clauses.

Proposal 2 also bests Proposal 1 in terms of support from independent research. Ample evidence for NumP has been provided for other Semitic languages, especially Hebrew (see e.g., Ritter 1991, 1992, 1995, Fassi Fehri 1993, Ouhalla 2004, among others). Moreover, Ouhalla (2004) specifically proposes an analysis of Amharic possessors where they are located in the specifier of NumP, relating them to possessors in Arabic which he also claims are located in Spec, NumP (see Chapter 2 for further discussion of Ouhalla’s analysis). Additionally, in den Dikken (2008) and Demeke (2001), the fronting of APs for focus reasons is analyzed as fronting to Spec,DP, in accord with Proposal 2.

These remarks should be taken as a preliminary sketch. Further evidence needs to be provided as to the content of NumP beyond plural inflection in Amharic (e.g., quantifiers; see Ritter 1991 et seq.) and whether the semantic effects sometimes associated with a lack of NumP are present in Amharic (see e.g., Heycock and Zamparelli 2004, Ghomeshi 2003). However, it is clear that three levels of projection are needed, and both previous research on definite marking and independent research on Semitic DPs in general indicate that one of the levels is NumP.

To bring the discussion back to plurals, recall that L08 proposes that irregular plurals (plurals derived via *n*[+PL]) lack a NumP projection (see (32)). However, it was just shown that a NumP projection is syntactically necessary for Amharic nominals. Just to be thorough, if irregular plurals did lack NumP, it is

<sup>37</sup> Low level phonological constraints presumably change *-u* to *-w* after a vowel - an instance of the common, Afroasiatic-wide vowel/glide alternation.

predicted that irregular plurals could not combine with either possessors or relative clauses. This is false. In (50), the irregular plural *māmh*→*ran* appears with a possessor and in (51) with a relative clause.

- (50) 30 *yä-t*→*mh*→*rt* bet-u *māmh*→*r-an*  
 30 of-school-DEF teacher-PL  
 30 teachers of the school  
 Walta tik13a4
- (51) *kä-koledZ-otΣtΣ* *yä-tāwt'at'-u* *māmh*→*r-an*  
 from-college-PL C-were.gathered-DEF teacher-PL  
 the teachers who were gathered from colleges  
 Walta tah09a2

I conclude that any analysis of irregular plurals must include NumP.

#### 4.2 Independent Plural Features Analysis

In L08, the plural features on *n* and Num are independent -- the value of one does not affect the value of the other. However, this cedes a lot of power to the mechanisms ensuring that all plurals are interpreted in the same way (despite their varying realizations), and these mechanisms were not always explicated in detail. In this section, I develop a similar analysis of the Amharic data, but attempt to be more explicit -- this analysis will be henceforth referred to as the independent analysis. Despite initial promise, I conclude that the analysis has severe difficulties correctly predicting the data, especially the fact that irregular plurals lack regular plural morphology (Num[+PL]) but are interpreted like any other kind of plural.

I begin by looking at how the Vocabulary Items for an independent analysis would be structured. Recall that Num corresponds to regular plural morphology, so as far as Num is concerned, the Vocabulary Items are fairly straightforward.

- (52) Num, [+PL] ↔ -otΣtΣ  
 Num, [-PL] ↔ ∅

Num with a plural feature is always spelled out as the suffix -otΣtΣ, whereas Num with a non-plural feature is spelled out as a null morpheme.

The morphological details for *n*[+PL] are more complex. On the most basic level, it should be asked what kind of feature [+PL] is on *n*. Is it exactly analogous to the plural feature on Num, i.e., binary (*n* is either [-PL] or [+PL])? Or is it privative (i.e., *n* is either [+PL] or just plain *n*)? Having [+PL] on *n* be a privative feature is intuitively appealing. It captures the intuition that certain nominals are inherently plural. In a lexicalist theory, these [+PL] nominals might be listed in the lexicon as separate plural forms (see Lowenstamm 2008 for some discussion on this point). However, nominals which lack a [+PL] feature would be indifferent with respect to number and could be inflected as either singular or plural. I adopt the assumption that the plural feature is privative on *n* henceforth (see Section 4.3 for some discussion of an analysis where the plural feature is binary on *n*).

As for the Vocabulary Items that realize *n*[+PL], several Vocabulary Items for *n*[+PL] were laid in Section 3 out and contextual restrictions determine which roots combine with which realizations of *n*[+PL]. I repeat a sample of the vocabulary insertion rules for *n*[+PL] in (53).

- (53) a. *n*, [+PL] ↔ -at / { √K'AL, √WÄR, √KAH→N... }  
 b. *n*, [+PL] ↔ ää, -tat / √N→GUS  
 c. *n*, [+PL] ↔ äa→ / { √KÄNFÄR, √D→NG→L... }  
 d. *n*, [+PL] ↔ -an/ { √MÄMH→R, √MÄZÄMM→R }

The effect of these rules is like a PF filter: any root can combine with  $n[+PL]$  in the syntax, but  $n[+PL]$  will be spelled out (and the derivation will not crash) only for those roots that appear in the contextual restrictions of the insertion rules. I assume that when  $n$  does **not** have a plural feature, it is realized as a null morpheme (if there is no root and pattern morphology for nominals).

$$(54) \quad n \leftrightarrow \emptyset / \{\sqrt{\text{BET}}, \sqrt{\text{SÄW}} \dots\}$$

In fleshing out the independent analysis, it is necessary to ask what kind of feature the plural features on  $n$  and Num in terms of interpretability and valuation. In Minimalism, features vary according to whether they are valued (enter the syntax with a value, +/- in this case) and/or semantically interpretable. In Chomsky 2000, 2001 and 2004, valuation and interpretability are linked concepts: a feature is unvalued if (and only if) it is uninterpretable. However, Pesetsky and Torrego (2007) propose that valuation and interpretability are separable properties of features, i.e., there are four potential combinations: unvalued and uninterpretable, valued and uninterpretable, unvalued and interpretable, valued and interpretable. I will follow Pesetsky and Torrego's approach here, as it allows for a less direct connection between semantic interpretability and whether or not a particular head enters the derivation with any of its features specified.

Looking first at the dimension of interpretability, then, recall that all the plurals in Amharic are synonymous (they are all sum plurals), despite their varying forms (setting aside for now the group plurals in (16) and (17)). One intuitive way to capture this is to assume that there is only one interpretable plural feature per nominal. I propose that Num carries the interpretable plural feature since it is the semantic locus of plurality in many languages, as discussed above. I also assume provisionally that the plural feature on Num is valued (in Section 4.3, I explore the consequences of having the plural feature on Num be unvalued, i.e., a probe for agreement).

By assumption, then, the plural feature on  $n$  must be uninterpretable; I also assume that the plural feature on  $n$  is valued, again saving discussion of unvalued features for the agreement analysis. The kinds of  $n$  and Num that result are in (55).

- (55) **Typology of  $n$  and Num in the Independent Analysis**
- a.  $n$
  - b.  $n[+PL]$  (uninterpretable, valued)<sup>38</sup>
  - c. Num [-PL] (interpretable, valued)
  - d. Num [+PL] (interpretable, valued)

There are four combinations of  $n$  and Num, and they are listed in (56) along with what type of plural or singular nominal they initially seem to correspond to.

- |      |                        |                  |
|------|------------------------|------------------|
| (56) | a. Num [-PL], $n$      | SINGULAR         |
|      | b. Num [+PL], $n$      | REGULAR PLURAL   |
|      | c. Num[-PL], $n$ [+PL] | IRREGULAR PLURAL |
|      | d. Num[+PL], $n$ [+PL] | DOUBLE PLURAL    |

To begin with the simple cases, a singular nominal ((56)a) results when  $n$  combines with Num[-PL]. Num is spelled out as a null morpheme (as per (52)), and  $n$  is spelled out as a null morpheme as well. The interpretable [-PL] feature on Num triggers a singular interpretation.

A regular plural ((56)b) results when  $n$  combines with Num[+PL]. Num is spelled out as  $-ot\Sigma t\Sigma$  (again, as per (52)) and  $n$  is spelled out as either a null morpheme or a nominal pattern. The interpretable

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<sup>38</sup> See Chapter 3 for extensive discussion of how this kind of feature does not crash the derivation.

[+PL] feature on Num triggers a plural interpretation. This predicts that all nominals should have a singular and a regular plural, and this is correct, as shown in [Section 3](#) above.

Consider the double plurals next: (56)d. Semantically, only the [+PL] feature on Num is interpretable so it is predicted that the semantics will be that of a typical plural. Morphologically, Num[+PL] will be realized as  $-ot\Sigma t\Sigma$  and  $n$ [+PL] will be realized as irregular plural morphology.

The independent analysis seems plausible so far, but the irregular plurals are surprisingly challenging in terms of their semantics. (56)c corresponds to an irregular plural morphologically:  $n$ [+PL] will be realized as irregular plural morphology, and Num[-PL] will be a null morpheme. However, since the plural feature on Num is interpretable, the nominal should be interpreted as singular. Since irregular plurals do, in fact, have plural meaning, some mechanism will have to affect Num such that its feature becomes [+PL].

For example, it could be that the value [+] for the [PL] feature could spread or percolate from  $n$  to Num, as they are both part of the same extended projection. In Grimshaw 2005 (p. 17), it is specifically proposed that a plural feature percolates from a nominal upwards throughout its extended projection. However, percolation must be carefully defined. To have the right effect here, when a feature percolates, it must not only spread to any heads that previously lacked that feature but it must also change the value of the feature on any heads that carried the feature before. The percolation would have to occur in the syntax, so as to ensure that Num[-PL] does not trigger a singular interpretation in the semantics. Unfortunately, PF will then receive a structure containing Num[+PL] and  $n$ [+PL], which is the same configuration as a double plural. Thus, irregular plurals are predicted to always be realized morphologically as double plurals, an unfortunate consequence.

We can attempt to avert this consequence with some technology. Intuitively, the presence of the same feature ([+PL]) on two immediately local heads (one c-commanding the other) may reduce the need to realize the feature in both locations. Several different kinds of morphological operations could be used here to either combine the features of  $n$  and Num or impoverish one of them such that the feature is not spelled out. To mention a few possibilities,  $n$  and Num could optionally undergo feature unification or Fusion, depending on the framework that is preferred. The proper conditions are met for feature unification without any modification of the structure (Num locally c-commands  $n$ , their matching features have the same value after percolation; see [Chapter 2](#) for more information on feature unification). For Fusion to occur, Num would simply have to lower to  $n$  ( $n$  and Num must be sisters; see Halle and Marantz 1993:136).

An alternative to a Fusion/feature unification account involves the operation Impoverishment that deletes features from morphemes (see e.g., Bonet 1991, Halle 1997). An optional application of Impoverishment could remove the [+PL] feature altogether from Num. If it is realized as the null morpheme, an irregular plural results when  $n$ [+PL] is realized; if it is realized as  $-ot\Sigma t\Sigma$  a double plural results.

However, the use of morphological operations to generate the irregular plural is ad hoc. Fusion was originally proposed to account for syncretism, e.g., the suffix  $-s$  on verbs in English expresses both present tense and third person singular agreement. It has been hypothesized that this is the result of a T node and an Agr node fusing (Halle 1997). However, in the case of Fusion proposed above, the realization of the fused Num and  $n$ [+PL] is the same as pre-fused  $n$ [+PL]. The primary purpose of Fusion in the privative analysis is simply to fold the features of Num, so to speak, into the  $n$ [+PL] so that Num is not realized separately.

Similarly, Impoverishment is conventionally used to force a morpheme to be realized in its default form. Impoverishment removes a feature from a morpheme so that a less marked vocabulary item that lacks that feature can be inserted (see discussion in Bonet 1991, Halle 1997). In the case of Impoverishment proposed above, though, the effect is that **either** vocabulary item associated with Num can be inserted, not just the singular, null morpheme default. The unconventional use of morphological operations is a red flag; it indicates stipulation may be at work.

Overall, the independent analysis is intuitively appealing, but imperfect in terms of implementation. Num is the semantic source of plurality and its morphological realization is fairly straightforward, whereas plurality on  $n$  is uninterpretable and idiosyncratically associated with particular roots. The independent

analysis requires (perhaps non-standard) percolation of the number feature from *n*, as well as some kind of ad hoc postsyntactic operation to fuse or remove the number feature on Num in certain cases.<sup>39</sup>

In the independent analysis, there is effectively no relationship between *n* and Num. Regardless of their plural features, they are freely combined by the syntax, and then additional mechanisms must manipulate these features in order to have the correct interpretations and forms generated. In the next section, I explore an alternative approach to the relationship between *n* and Num -- that it is a dependent relationship of agreement. An agreement analysis can rely on many of the same useful assumptions as the independent analysis (e.g., there is only one interpretable plural feature per DP). However, it does not require the ad hoc machinery necessary for the independent analysis, and turns out to be a much more straightforward way of accounting for the Amharic plurals.

### 4.3 Agreement Analysis

#### 4.3.1 Basics

In the independent analysis, it was assumed from the start that the plural features on *n* and Num do not affect one another directly. In this section, I develop an agreement analysis of number in Amharic where the plural feature on Num agrees with the plural feature on *n*, i.e., the plural feature on Num is dependent on the plural feature on *n*. This analysis successfully predicts that the plurals are uniform semantically because it retains the idea that only one of the plural features is interpretable (the one on Num). However, it derives the morphological variety of plurals by assuming that agreement is feature sharing, in a sense to be made clear immediately below.

Before launching into the details about plurals, a sketch of my background assumptions about agreement is necessary. I assume that there is a syntactic relation Agree as laid out in Chomsky 2000, 2001, and 2004, i.e., the standard Minimalist view where a probe with uninterpretable features searches downward in the structure for a goal containing interpretable features with which it can agree and thus have its own features valued. However, I deviate from the standard Minimalist view in two assumptions (i) valuation and interpretability are separate properties of features (see discussion in Section 4.2.1) and (ii) agreement is feature sharing (Frampton and Gutmann 2000, Frampton et al. 2000, Pesetsky and Torrego 2007, the HPSG literature (e.g., Pollard and Sag 1994), *inter alia*). Under this view, it is unvalued heads that probe downwards and have their features valued by goals.

I assume that Agree involves a head with an unvalued feature F (the probe) scanning its c-command domain for a head with another instance of F (the goal). When the probe finds a goal, the matching features on the probe and the goal coalesce into a single shared feature (Frampton and Gutmann 2000:4). When an unvalued feature and a valued feature coalesce, the resulting single shared feature has the value of the original valued feature.

A schematic example of feature sharing is in (57).

(57) **Feature Sharing**

$$\begin{array}{l} X \quad \dots \quad Y \quad \rightarrow \quad X \quad \dots \quad \dots \quad Y \\ F[ \quad ] \quad \quad \quad +F \quad \quad \quad +F \quad \text{-----} \quad +F \end{array}$$

In (57), the head X is the probe: it has a feature F that is unvalued, and this is represented by the open square brackets ( [ ] ). The head Y is the goal: it has a valued (+) instance of the feature F (and I assume it is in the c-command domain of X). They enter into an agree relationship and their features coalesce into a single shared

<sup>39</sup> The postsyntactic operation that eliminates a second [+PL] feature will also optionally apply when a double plural is generated by the syntax. This has no negative consequences empirically, but it makes the analysis redundant in that there will be two sources for irregular plurals -- (55)c and (55)d. However, it also means that even if (55)c was not generated by the syntax, irregular plurals could be produced. The elimination of this option would simplify the analysis in that would no longer be a need for a percolation mechanism. However, it is not immediately clear what could prevent Num[-PL] and *n*[+PL] from combining -- it may be that Num[-PL] only subcategorizes for plain *n*, but this is stipulative.

feature: this is represented by the horizontal line connecting them, as per the notation in Frampton and Gutmann 2000. The shared feature has the value (+) and as a whole is [+F].

To see how feature sharing works for number in Amharic, some assumptions are needed about the plural features involved. Crucially, [PL] cannot be a privative feature on *n* in this analysis. It must be able to be [-PL] as well in order for a singular interpretation to surface at all since the plural feature on Num (where the plural feature is interpreted) always receives a value from *n*. I assume the following feature bundles for Num, *n*[+PL], and *n*[-PL]. A lowercase italic *n* or *i* before a feature indicates uninterpretability or interpretability respectively.

(58) **Plural Feature on num and *n***

Num	<i>n</i>	<i>n</i>
<i>i</i> PL [ ]	<i>n</i> +PL	<i>n</i> -PL

The plural feature on Num is interpretable but unvalued, whereas the plural features on *n* are always uninterpretable but valued. In other words, Num is where plurality features are interpreted (i.e., they compose semantically with *n*P), but the value for the plurality feature comes from the nominal itself, or more specifically, the nominalizing head *n*.<sup>40</sup> The Vocabulary Items that realize Num and *n* will be essentially the same as before, but the non-plural Vocabulary Items will contain a [-PL] feature.

- (59) Num, [+PL] ↔ -otΣtΣ  
 Num, [-PL] ↔ ∅

- (60) a. *n*, [+PL] ↔ -at / { √KʷAL, √WÄR, √KAH→N... }  
 b. *n*, [+PL] ↔ ää, -tat / √N→GUS  
 c. *n*, [+PL] ↔ äa→ / { √KÄNFÄR, √D→NG→L... }  
 d. *n*, [+PL] ↔ -an/ { √MÄMH→R, √MÄZÄMM→R }  
 e. *n*, [-PL] ↔ ∅ / { √BET, √SÄW ... }

Since the plural feature on Num is unvalued, it is a probe. It searches downward in the structure to find a valued occurrence of the plural feature, and it need look no further than the head of its complement *n*P. Num and *n* enter into an agree relationship, and their PL features coalesce into a shared feature (and value): either [+PL] or [-PL] depending on what value the plural feature on *n* had originally (I will focus only on cases where *n* has a [+PL] feature originally henceforth). This is represented in (61).

(61) **Agreement between Num and *n*[+PL]**

Num	.....	<i>n</i>	→	Num	.....	<i>n</i>
PL [ ]		+PL		+PL	—————	+PL

It is not immediately clear what kind of feature results when two features are coalesced that differ in interpretability. To take an example, when phi-features are shared between a nominal and T, it remains true that the features are interpretable on the nominal but not on T (T does not suddenly vary in interpretability depending on phi features). With this in mind, we might conceive of interpretability more as a semantic property of a given head, and not a diacritic on features that has to be taken into account during feature sharing. The semantic component could attempt to interpret the shared feature on both of the heads it is

<sup>40</sup> It is possible to not separate valuation and interpretability and have the analysis be simpler here -- Num would simply have an uninterpretable plurality feature where *n* would have an interpretable plurality feature. However, this seems much more arbitrary than the valued/interpretable analysis, which is grounded in the intuition that number, as a phi-feature, comes from *n*. See discussion in Section 4.4.

shared between --- as long as the shared feature is interpretable on one of the heads, it will not cause the derivation to crash at LF. Pesetsky and Torrego 2007 adopt essentially this view in their discussion of the semantics of feature sharing (drawing on Brody's 1997 Thesis of Radical Interpretability; see also Danon 2008 on feature sharing in the construct state).

In the case of (61), then, the shared plural feature is interpretable only on Num and is thus interpreted just once. Thus, all the different types of morphological plurals that can result from the representation in (61) have the same (presumably sum) plural interpretation, and this is the correct result.

Morphologically, the different types of plurals are generated depending on how the shared feature is spelled out at PF. To the best of my knowledge, none of the research on feature sharing explicitly addresses how shared features are realized morphologically. Are they realized on the probe? On the goal? On both? It seems as a minimum that it is possible for a shared feature to be realized on both the heads that share it since this is what occurs in feature sharing between T and a DP subject. The Amharic regular and irregular plurals interestingly provide evidence that a shared feature can, in fact, be spelled out on either head as well as on both.

Consider again (61). After Num and *n* agree, PF receives a representation where a valued plural feature [+PL] is shared between Num and *n*. A choice must be made as to which head (or both) the feature will be assigned to before vocabulary insertion: call this feature resolution. If [+PL] is resolved to be on Num, then Num is spelled out as *-otΣtΣ* and a regular plural results. If [+PL] is resolved to be on *n*, then an irregular plural results. If [+PL] is resolved on both heads, then the result is a double plural. In sum, all the choices for Amharic plurals can be derived depending on where the shared feature is spelled out.

- (62) [+PL] realized on Num = REGULAR PLURAL  
 [+PL] realized on *n* = IRREGULAR PLURAL  
 [+PL] realized on both Num and *n* = DOUBLE PLURAL

The agreement analysis thus deals with all the plurals with ease compared to the independent analysis. The plurals are crucially all semantically the same, but morphologically different, and this result exactly captures the nature of the plural system in Amharic.

#### 4.3.2 Agreement Analysis: Details

It remains to be seen how the morpheme on which the feature is **not** resolved is spelled out. Consider (61) once more, and assume at PF that the [+PL] feature is resolved to Num. Num will then be spelled out as *-otΣtΣ*. But how will *n* be spelled out? Perhaps the most obvious assumption about *n* is that it will lack a [+/- PL] feature altogether, since the feature was resolved on Num. However, all of the Vocabulary Items for the category *n* also contain either a [+PL] or a [-PL] feature (see (59) and (60)). The Subset Principle states that a vocabulary item cannot be inserted which has a feature not present in the morpheme; since *n* would lack a plural feature in this case, it would seem that it could not be spelled out at all.<sup>41</sup>

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<sup>41</sup> Another option here would be to change the Vocabulary Items. Perhaps the Vocabulary Item that currently relates the feature bundle *n*[-PL] to a null morpheme instead relates plain *n* to a null morpheme. This is an inadvisable move, though, since it makes a false prediction about irregular plurals. Consider the following scenario. A [+PL] feature is resolved to *n*, and *n* takes as its complement a root that does not have an irregular plural, say,  $\sqrt{\text{BET}}$ . The PF component then attempts to insert a Vocabulary Item for the feature bundle *n*, [+PL] in the context of  $\sqrt{\text{BET}}$ . None of the Vocabulary Items that have the feature bundle *n*, [+PL] will work since  $\sqrt{\text{BET}}$  never appears in any of their contextual restrictions. However, according to the Subset Principle, a Vocabulary Item can be inserted that matches only a subset of the features in the morpheme. So, if there is a Vocabulary Item *n*  $\square$   $\emptyset$ , then the null element will be inserted for this particular *n*, [+PL]. The problem is that the resulting nominal receives a plural interpretation (since there was a [+PL] feature in the syntax) but has no overt morphological realization of plural -- specifically, the nominal *bet* should be capable of being interpreted as singular or plural. This is a false prediction, and it can be prevented if Vocabulary Items for *n* are either [+PL] or [-PL]. In that case, there is simply no Vocabulary Item that can be inserted for *n*, [+PL] in the context of  $\sqrt{\text{BET}}$  (its [+PL] feature clashes with the [-PL] feature), the derivation crashes, and this is a good result.

However, there is another option for what happens when the feature is not resolved to *n*. When a feature is not resolved to a particular morpheme, the feature could revert to its unmarked (default) value on that morpheme. In the case of the plural feature, this means that all morphemes to which the plural feature is not resolved are realized as [-PL], i.e., they are realized in their singular forms. This makes exactly the right empirical predictions. In a regular plural, *n* is spelled out as if it were [-PL], i.e., as simply the typical nominal pattern or a null morpheme. In an irregular plural, Num is spelled out as if it were [-PL], i.e., as a null morpheme. Note that this does not change the semantics at all -- the syntactic representation still contains an interpretable plural feature. It is purely morphologically that these morphemes would be in any way singular.

One way to accomplish this effect would be to state it outright as a principle of feature resolution, perhaps along the lines of ‘when a feature is not resolved to a particular morpheme, the feature is realized in its unmarked value on that morpheme.’ Another way to accomplish it would be to assume that when a feature is not resolved to a particular morpheme, the value for that feature is removed from the morpheme. If the [+PL] feature is not resolved to *n*, for example, then the feature bundle for *n* becomes *n*, PL [ ]. Vocabulary Items do not contain unvalued features, though, so in order for this morpheme to be spelled out at all, it will need to have a value. A morphological redundancy rule which applies at PF can assign it the default value.

(63) **PF Redundancy Rule**

PL [ ] → [-PL]

Redundancy rules generally supply unmarked values to features that are valueless. They are well-known from research on phonological underspecification, but are not unattested in morphology see e.g., Halle and Marantz 1994). A similar kind of redundancy rule is also shown to be independently necessary in Amharic for a completely different phenomenon (gender agreement) in Chapter 5. Having the value removed from a feature and then replacing it with a redundancy rule seems complex, and the details remain to be hammered out here. However, the basic intuition that a feature is realized in its default form when no longer shared appears (to me) to be on the right track.<sup>42</sup>

The feature sharing analysis in general happily makes the correct predictions about singular nominals, in which the feature [-PL] is shared between Num and *n*. If the feature is resolved on Num, Num is realized as a zero morpheme, *n* receives a [-PL] value by default and the typical nominal pattern is inserted. If the feature is resolved on *n*, the typical nominal pattern is inserted, Num is assigned [-PL] by default, and again the correct result obtains. If the feature is resolved on both, the same result obtains. The agreement analysis thus correctly predicts the semantics and morphology of all the singular and plural nominals, assuming that a feature which is not resolved to a given morpheme reverts to its default value.

The last lingering issue to be addressed concerns the broader implications of the Amharic plurals, i.e., what they predict about how shared features are realized in general. In the literature, it is certainly not the

It should be noted that a bare nominal like *bet* can indicate multiple entities is when it is a number neutral indefinite (see [Section 1](#)). However, the morphology and syntax of number-neutral indefinites, and how they receive a plural interpretation, is very unclear -- it is even still under investigation whether they are incorporated or not. I thus hesitate to equate them with other, more typical types of nominals. Also, more tellingly, a bare nominal like *bet* can never be number neutral if it is definite, and nothing prevents a definite marker from attaching to the nominal *bet* when it is comprised of the root  $\sqrt{\text{BET}}$  and *n*[+PL] -- the result (*bet-u house-DEF* \* ‘houses’) is ungrammatical in every context.<sup>42</sup> Two remarks are necessary here. First, it is possible that feature sharing could be formalized in such a way so that feature **values** are what is shared (not feature specifications). In that case, not resolving a shared feature to a particular head would necessitate ‘breaking’ the feature sharing relationship and thus leaving the head with a valueless feature. Second, the redundancy rule here may seem overly general since it is not limited to feature sharing or even nominal contexts. However, I believe this generality does not make incorrect predictions, and in fact allows this exact redundancy rule to be used in other contexts (and thus be independently justified). For example, the same redundancy rule could be used to assign default number agreement (see Chapter 5). Also, note that the scope of the redundancy rule is necessarily limited since unvalued features do not generally enter PF -- I assume that most unvalued features are successfully valued during the syntax by Agree. These issues are discussed much more thoroughly in [Chapter 5, Section 3.3.1](#).



case that all the phenomena claimed to be accounted for by feature sharing are like the Amharic plural. Feature sharing is typically used to account for agreement (e.g., between a subject and a verb), which involves features necessarily co-occurring on **both** elements that participate in a relation. Viewed in this light, Amharic seems atypical. However, I would like to suggest a reason why Amharic is different which could be used as a starting point for crafting a general theory of the morphology of shared features.

I have been ignoring until this point the fact that Num, *n* and the root are all ultimately part of the same word. For example, the word *bet-ot-ΣtΣ* ‘houses’ contains a root ( $\sqrt{\text{BET}}$ ), a nominalizing head *n*, and a plural Num suffix (*-ot-ΣtΣ*). This means that by the time these morphemes are pronounced, they have been morphologically combined to form a single item, whether through raising, lowering, Local Dislocation or some combination of these operations. This is quite different from typical agreement relations, e.g., between a subject and a T. The subject and T (most of the time) remain completely separate words, i.e., they are not part of the same morphological unit. I would like to suggest that it is possible to spell out only one of the shared features in Amharic plurals because all the feature sharing heads end up in one morphological location. In a word like *bet-ot-ΣtΣ*, the shared feature is linked among members of the same morphological unit (Morphological Word, in the terminology of Embick and Noyer 2001), so as long as it is expressed somewhere within that unit, it does not matter if it is resolved in both of its locations or only one. This idea makes strong predictions, and in Chapter 5 it is discussed more fully whether they are all borne out. However, the idea that morphologically local shared features need not all be realized represents a viable reason why Amharic plurals would have more spell-out options than subject-verb agreement.

In sum, the agreement analysis of split number in Amharic makes the right empirical predictions and properly characterizes the data. In terms of the semantics, there is only one plural feature and one plural interpretation. In terms of the morphology, the plural feature can be realized in one or all of multiple locations. Moreover, the agreement analysis is an initial step towards a theory of how shared features are realized at PF.

### 4.3.3 Idiosyncratic Semantics

It is an advantage of the agreement analysis that all plurals receive the same interpretation, i.e., they are synonymous regardless of whether plurality is marked on *n*, on Num or on both morphologically. However, in Section 3.2, it was shown that certain irregular plurals trigger idiosyncratic interpretations of the roots involved. For example, *näfs* ‘soul’ can mean ‘insects’ or ‘souls’ when irregularly pluralized as *näfsat* but only ‘souls’ when regularly pluralized as *näfs-ot-ΣtΣ*. How is this accounted for in an agreement analysis?

I assume that the Encyclopedia is where the meaning of a root is determined, and the meaning is dependent on the context of the categorizing heads that dominate the root (Marantz 2001, 2007, Arad 2003, 2005, Alexiadou 2009, Borer 2008, 2009, forthcoming). Borer (2008, 2009, forthcoming) in particular proposes that Encyclopedia searches are limited to a root plus any categorizing heads that may dominate it (see Section 3.2.1) and the searches operate over a post-syntactic structure. These turn out to be precisely the assumptions needed to account for idiosyncratic irregular plurals.

Consider the example in (64) of the morphological representation of *näfs-at* ‘souls, insects.’ I differ from Borer in that I will assume that the Encyclopedia searches over a PF representation before vocabulary insertion (i.e., , hierarchical structure is still present, and morphemes have not been realized yet although roots are present).<sup>43</sup>

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<sup>43</sup> The reason for this is as follows. At some point during PF, Num, *n* and the root must combine into one Morphosyntactic Word. The operations that would accomplish this (e.g., Lowering) are usually considered to occur in Distributed Morphology **before** Vocabulary Insertion. Thus the representation that the Encyclopedia sees if it operates over a post-VI representation would be more like the following:

(i) [NumP [*n*P [ $\sqrt{\text{NÄFS-at-ot-ΣtΣ}}$ ]]]

The problem here is that the regular plural suffix is within the first search domain of the Encyclopedia, so it is predicted to be capable of influencing root meaning. Regular plurals do not influence root meaning, though. I sidestep this

(64)  $[\text{NumP}[\text{Num}[-\text{PL}]] [\textit{nP} \textit{n}[\text{+PL}]] [\sqrt{\text{N}\ddot{\text{A}}\text{F}\text{S}}]]$

The shared plural feature between NumP and *nP* has been resolved on *n* such that it is *n*[+PL]. Num has accordingly received a default value and is Num[-PL]. The Encyclopedia only searches over the *nP* portion of the structure, i.e., the root and its categorizing head *n*. I assume the Encyclopedia entry for  $\sqrt{\text{N}\ddot{\text{A}}\text{F}\text{S}}$  is as in (65).

(65)	<u>Root</u>	<u>Context</u>	<u>Interpretation</u>
	$\sqrt{\text{N}\ddot{\text{A}}\text{F}\text{S}}$		soul
	$\sqrt{\text{N}\ddot{\text{A}}\text{F}\text{S}}$	<i>n</i> [+PL]	insect

The root  $\sqrt{\text{N}\ddot{\text{A}}\text{F}\text{S}}$  means ‘soul’ in any context, but the interpretation ‘insect’ is licensed only in the context of *n*[+PL]. Thus, the Encyclopedia returns two possible interpretations for the root in (64) since *-at* is present: ‘soul’ or ‘insect.’<sup>44</sup> Note that the plural interpretation of ‘insect’ is guaranteed by the fact that it is licensed in the context of *n*[+PL]; this will force the shared plural feature between *n* and Num to be [+PL] and thus Num will be interpreted as plural.

In contrast to (64), consider the regular plural *näfs-ot* $\Sigma\tau\Sigma$ .

(66)  $[\text{Num} \text{Num}[\text{+PL}]] [\textit{nP} \textit{n} [\sqrt{\text{N}\ddot{\text{A}}\text{F}\text{S}}]]$

The shared plural feature was not resolved to *n* and *n* thus lacks a plural feature. The Encyclopedia searches only over the *nP*, and since there is no *n*[+PL], only the interpretation ‘soul’ is returned for the regular plural.

The dependence on *n*[+PL] makes an interesting prediction about double plurals. Specifically, it predicts that semantic idiosyncrasies should be retained in the double plural since *n* is [+PL]. This prediction is borne out.

(67) a.  $[\text{NumP} \text{Num}[\text{+PL}]] [\textit{n}[\text{+PL}]] [\sqrt{\text{N}\ddot{\text{A}}\text{F}\text{S}}]] = \textit{näfs-at-ot}\Sigma\tau\Sigma = \text{‘souls, insects’}$

The double plural *näfs-at-to* $\Sigma\tau\Sigma$  can mean either ‘souls’ or ‘insects,’ and the other semantically idiosyncratic irregular plurals also retain the idiosyncratic meanings in the double plural.<sup>45</sup> This section is just a brief sketch, and non-trivial issues remain open (see the footnotes). However, there is a viable way in which the agreement analysis is capable of generating the idiosyncratic interpretations of irregular plurals, relying on (and confirming to some extent) Borer’s proposals about how Encyclopedia searches occur.

#### 4.4 Summary

In this section, I reviewed three different analyses of the relationship between *n* and Num. The first was an analysis originally proposed for Yiddish double plurals by Lowenstamm (2008), but it predicted that (a) Amharic should lack double plurals, and (b) Amharic should lack a NumP when plural features on *n* are realized. Both predictions were shown to be false.

problem here by claiming that the Encyclopedia searches occur before the plural morphemes attach to the root. However, hopefully, a more general and better-supported solution will eventually be found since it is common for functional heads like Num and categorizing heads like *n* to all end up in the same Morphosyntactic Word.

<sup>44</sup> This crucially assumes that no P $\square$  ninian principle is in effect, i.e., the interpretations are not in competition with one another.

<sup>45</sup> The exception is *abzab* which a consultant reported had **only** the idiosyncratic interpretation ‘barbarians’ in the double plural. What may be happening here is that *abzab* has been reanalyzed as a collective singular ‘barbarians’ and then the alleged ‘double’ plural is actually the regular plural of the collective (whatever this may mean semantically - more detailed semantic fieldwork and comparative work with Arabic needs to be done here -- see also fns. 12 and 13).

I then developed two analyses: the independent analysis and the agreement analysis. In the independent analysis, [PL] is a privative, uninterpretable feature on *n* and a binary, interpretable feature on Num. This approach is initially appealing, but requires a lot of machinery to generate irregular plurals. In the agreement analysis, Num and *n* share a [PL] feature whose value is determined by *n* but which is interpretable on Num. The agreement analysis generates all the plurals and singulars and captures the generalization that all the plurals are semantically identical, but morphologically different.

## 5 CONCLUSIONS AND REMAINING QUESTIONS

In this chapter, a morphological and syntactic analysis of the Amharic plural system has been developed. I argued for a split analysis of number, where irregular plurals derive from the combination of *n*[+PL] with a root whereas regular plurals derive from the combination of *n*P with a Num head. The split analysis explains many otherwise puzzling facts about the Amharic plural system, including the semantic idiosyncrasies of irregular plurals and the existence of double plurals.

Although supported by the data, a split analysis raises questions about how the plural features on *n* and Num are interpreted semantically and realized morphophonologically. Several different approaches to answering these questions were compared, and I concluded that the analysis of number on *n* and Num in Lowenstamm 2008 and an independent analysis of number on *n* are both not feasible for Amharic. Instead, I developed an agreement analysis that relies on feature sharing.

From a broader perspective, how universal is a split configuration for nominal number? There is unusually strong evidence in Amharic for a split system between Num and *n* -- irregular and regular plural morphology are not in competition, there are double plurals, and there are systematic morphophonological and semantic idiosyncrasies associated only with irregular plurals, to name just a few pieces of evidence. However, these different observations carry different amounts of weight. For languages in which irregular and regular plural morphology are not in competition, it seems clear that number must be split between two different heads in the syntax; I know of no other such languages at this time. For languages which have double plurals (e.g., Arabic, Somali, Breton, etc.), it is clear that number is realized by two different morphological elements, but it is not clear that a plural feature has to be on Num and *n* per se (it could be on two *n*'s as in Lecarme's 2002 analysis of Somali; see also Section 3.5). Finally, most plural systems feature some morphophonological idiosyncrasies and have at least small pockets of semantic idiosyncrasy (e.g., *brothers* and *brethren* in English), and it makes less sense to say that the entire plural system is split in this case.<sup>46</sup>

The question then is how to craft an analysis of number that can subsume all the variation, and the independent analysis actually seems better poised than the agreement analysis to describe other languages. Languages which do not have the traits listed above with any systematicity or frequency simply use Num as the locus of plurality semantically, syntactically and morphologically. Exceptions can be accounted for by the occasional *n*[+PL] associated with a particular root. For systems like Somali and other highly lexical plural systems (see e.g., Wiltschko 2008 on Halkomelem Salish), the locus of plurality may have shifted to *n* morphologically, semantically and syntactically. The remainder are the mixed systems like Amharic, where the locus of plurality is split between *n* and Num in that there are a large number of *n*'s that have plural features (alternatively, the agreement analysis could be Amharic's way of grammaticizing such a split). The unique conditions that may have caused Amharic's split system (the colliding of a Semitic plural system and a Cushitic plural system) were described above in Section 3.5, and I hope to continue this research by looking at other Ethio-Semitic languages for evidence of a similar split.<sup>47</sup>

<sup>46</sup> Outside of number, a 'split' analysis of TP structure has been proposed by Bobaljik and Thrainsson (1998), such that languages parametrically vary whether their clausal structure includes both AgrsP and TP (split) or just IP (unitary; Inflectional Phrase - hosting both tense and agreement morphology). This seems more 'split' than the number case -- recall that in the agreement analysis, there is really only one shared number feature syntactically and semantically, and both NumP and *n*P are always projected.

<sup>47</sup> A cross-cutting issue that muddies the waters here is that morphological and semantic idiosyncrasy are not always correlated as tightly as they are in Amharic. For example, in English, *looks* is regular morphologically but has an idiosyncratic semantic interpretation of 'attractiveness' as well as the regular interpretation 'glances.' However, it is

A number of empirical issues were left open in the investigation. The role of number neutral indefinite nominals in a split analysis remains to be clarified, especially if number neutrality is connected to the presence or absence of NumP (see e.g., Ghomeshi 2003, Déprez 2005; see also Heycock and Zamparelli 2003 on the semantics of NumP and Kwon and Zribi-Hertz 2004 on the semantics of ‘lexical’ plurals). Collective and singulative nominals as well as group interpretations are a crucial part of the number system in Arabic and many other Semitic languages. While their presence has been hinted at in Amharic, a full treatment and integration into a split analysis remains to be done. Finally, in other languages with complicated plural systems (Breton, Somali), it is sometimes the case that the more ‘lexical’ plurals can feed ostensibly derivational processes like diminutive-forming. It remains to be seen whether this is the case in Amharic.

The goal of this chapter was to provide a nuanced understanding of the morphology and syntax of Amharic number. I believe the goal has been accomplished, but the chapter also has broader implications for key theoretical issues like word formation and feature sharing. It provides confirmation of the approach to word formation originally advanced in Marantz 2001 that takes category-defining heads and roots to be domains of idiosyncrasy. It provides support for Borer’s (2008, 2009, forthcoming) conception of Encyclopedia searches. It explores the semantic and phonological ramifications of feature sharing, which has become a widely-used tool to formalize agreement in Minimalism. Also, most broadly, it contributes to the theory of number and how its morphological, syntactic and semantic facets can be separate yet closely interconnected in a single language. Amharic is not the only language in which number is complex, and it is my hope that the proposals here will ultimately assist in a better cross-linguistic understanding of nominal number.

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certainly much more common cross-linguistically for irregular plurals to be idiosyncratic semantically (see Acquaviva 2008: Ch. 3 for discussion and examples). An analysis that allows for exceptions like *looks* while simultaneously predicting them to be less common has yet to be developed (the analyses of semantic idiosyncrasy discussed in Section 3.2.1 do not help), and I leave the resolution of this issue to future work.