

P-FORMS IN DISTRIBUTED MORPHOLOGY
ACCOUNTING FOR A TYPE OF SEMILEXICAL FORM

By

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To better days
and spirited
debate.

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LIST OF ABBREVIATIONS AND TERMS

DP	A determiner phrase, a phrase with a determiner in the specifier position
F-Morpheme	A functional morpheme: a bundle of morphosyntactic features that only later gets realized phonologically by a competing VI.
L-Morpheme	A lexical morpheme: a $\sqrt{\text{Root}}$ dominated by a functional head. Phonology is inserted based on the presence of the $\sqrt{\text{Root}}$ and not specific morphosyntactic features.
L-node	The place in the syntactic structure that hosts a $\sqrt{\text{Root}}$
P-form	The phonological forms that commonly represent both English prepositions and particles. This thesis argues they are in the l-morpheme class.
p_	A functional head capable of licensing $\sqrt{\text{Roots}}$. Features [+,- case] [+relational]
$\sqrt{\text{Root}}$	A place holder for what we traditionally call lexical items.
UG	Universal Grammar: A belief that all languages work from a set of innate biological principles.
VI	Vocabulary Item: Phonological strings used to realize f-morphemes and l-morphemes.
vP	Verb phrase with a little v_ functional head that assigns a theta role to the external agent.

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The grammatical concept of the preposition and particle in English is both poorly defined traditionally and within Distributed Morphology, DM. This paper will show how the behavior of this historically troublesome concept, its distribution and meaning, can only be partially explained within the advancing system of DM. Thus, as an advancement to DM, this paper will propose the addition of a little $p_$ head to $n_$, $v_$, and $a_$ as a potential functional head capable of licensing $\sqrt{\text{Roots}}$ or adjoining to $\sqrt{\text{Root}}$ phrases. It will also propose that there exists (a) restriction(s) between functional heads and the licensing of certain I-morphemes. This will be viewed as a two staged filter that is capable of prohibiting and discouraging certain $\sqrt{\text{Roots}}$ from being categorized by certain functional heads, although all $\sqrt{\text{Roots}}$ by nature are a-categorical. Finally some thoughts on P-forms as particles will be discussed.

CHAPTER 1 WHAT ARE P-FORMS

This thesis attempts to refine the description of prepositions and particles in English using the Theory of Distributed Morphology. Moreover, it shows how the behavior of prepositions also challenges the framework of Distributed Morphology. Chapter 1 is organized as follows: the introduction shows that prepositions are a problem for traditional categorization, the following heading gives a simple syntactic distributional definition for prepositions, and a conservative list of some phonological forms available for that distribution. In the next section, particles are defined by their syntactic behavior in contrast to prepositions. Moreover, in this section the number of forms used as both prepositions and particles is highlighted and the term P-form is defined. After that, Distributed Morphology is introduced. A reason for using the framework is given and the nature of the system is explained. The following heading then explains the consequences of DM and the section after lists DM's core assumptions. The next section introduces the idea of P-forms in DM and asks if they can easily be identified in the system. Then Chapter 1 explains that within DM there are only two choices for identifying a morpheme. Finally it briefly argues that this appears to be a problem for DM, considering the behavior of P-forms.

The rest of the thesis is as follows: Chapter 2 highlights the behavior of prepositions and particles, shows how this is a categorization problem for DM, and presents a Little p_* functional head as a possible solution. Chapter 3 examines possible controls on Vocabulary Insertion within DM and determines that controls placed external to the $\sqrt{\text{Root}}$ are best argued for. Chapter 4 proposes a Grammatical filter to prevent unwanted phonological strings from entering $\sqrt{\text{Root}}$ s dominated by a little p_* functional

head. It also talks about how the Encyclopedia could be responsible for further discrimination within DM. Chapter 5 evaluates particles syntactically to account for the problems, changes, and solutions presented in the other four Chapters. It concludes the thesis by highlighting some further issues to explore and by acknowledging problems with the present analysis.

Categorizing P

In English prepositions and their often homonym counterparts, particles, have consistently created problems for grammarians and linguistic theories. The nature of these forms has been the topic of recent discussion in work coming from different and often conflicting perspectives (den Dikken 1995 and 2006, O'Dowd 1998, Botwinik-Rotem 2004, Elenbaas 2007, Svenonius 2007 and 2008 and Keizer 2008). Often discussion stems from the fact that these forms cannot easily be categorized. This lack of conformity conflicts with the belief that "the central question for any version of universal grammar is, or ought to be, the status of the basic distinctions recognized by traditional grammar" (Croft 1991: 2) In other words, it is important to identify the basic particles from which a theory of grammar can be built and it is troubling when a piece does not cleanly fit.

According to Chomsky, "virtually all items of the lexicon belong to the *substantive* categories, which we will take to be noun, verb, adjective and particle" while the "other categories" can be considered "*functional*" (1995: 6). This functional category often includes prepositions. Selkirk states that "nouns, verbs and adjectives constitute the class of lexical categories in English, while determiners, prepositions, auxiliaries, modals, complementizers, conjunctions and other sorts of particles fall into the class of functional categories" (1995:1). However, as den Dikken points out, Koopman (2000)

finds reason to “explicitly assimilate[...] P [the prepositional category] to the relatively uncontroversial lexical categories A, N, and V” (2006:1). Koopman argues that the category P has functional projections like the other lexical categories and thus has more structure than previously thought. Svenonius (2008) expands upon the structure of P, but it is unclear if the forms under P are lexical or functional in nature. According to Hudson, “the clearest example of a split word class is Preposition. Some prepositions are very clear FW’s [function words] -- for example, *of*, *at*, *in*, *to*, and *by* all qualify in terms of both meaning and length” (Hudson 2000:17). Moreover, some “prepositions have regular uses in which they could be said to have no independent meaning at all” (2000: 17). Of course, this statement is arguable (O’Dowd 1998 for a meaning and use account of prepositions). On the other hand, Celce-Murcia and Larson-Freeman reverberate Taylor (1993) by emphasizing that “prepositions are indeed polysemous” and thus rich in possible meaning (1999: 404). Given this disagreement over the theoretical category, structure, and meaning of prepositions, prepositions form an interesting linguistic notion.

If prepositions are not so easily partitioned, then for traditional classification purposes it is not so debatable to say that in English prepositions form a “borderline case” (Hudson 2000:17). In short prepositions confuse some of the more common functional lexical distinctions, and this can be seen when considering the following three notions.

The Closed versus Open Class Distinction: prepositions form a relatively closed group but the category has allowed some new forms to arrive as loanwords: *via*, *qua*, *pro*, *circa*, *vis-a-vis*, *per*, and *save* (Hudson 2000: 19). Furthermore, according to

Kortmann and König, “it is generally acknowledged that the class of prepositions in a language is by no means a closed class” (1992: 671). All in all, accepting loanwords is not common with functional categories and prepositions break the rule.

Number of Members Distinction: functional classes have small memberships compared to the plethora of words found in the substantive classes. Prepositions on the other hand form a class “of intermediate size ... with about seventy clear single-word members” (Hudson 2000:19)¹. However, this number is not fully agreed upon as the number varies depending on your source. For example Bennett (1975: 1) lists only 37² while Lindstromberg (1998: 300-306) accounts for over 80 possible candidates. This kind of membership differential is not present with other functional categories such as determiners³ and conjunctions whose number of members is more clearly established.

Semantic Variation: functional words tend to have a smaller range of meaning and are not often crucial in obtaining figurative meaning. However, prepositions can show variable, metaphoric meaning, as can be seen with the following example.

(1) John survived the whole day on just one sandwich.

By means of an extension of the basic meaning of *on*, to make surface contact or to support, one could picture John atop of a sandwich, which is metaphorically supporting him through the day. This picture is shown in Celce-Murcia and Larsen-Freeman (1999: 418). Moreover, “there are also prepositions like *during* and *after* which have just as

¹ This is not the total number of forms used in this paper.

² His list may not be intended to be exhaustive

³ It is possible that the number of Determiners in English is also debatable as [∅] is often proposed to be the determiner for Bare Plural NPs (Carlson 1977)

much meaning as some adverbs ... which are synonymous except for being anaphoric (*meanwhile, afterwards*)” (Hudson 2000: 17). Functional words or elements do not usually get used metaphorically or carry such ‘lexical weight.’ They tend to strictly serve grammatical functions.

A relevant question at this point is if prepositional forms compose a natural class in English since they are so troublesome to classify according to a lexical functional distinction. The verdict to this question continues to be positive (Elenbaas 2007 and Svenonius 2007), despite different conclusions over their putative functional and lexical placement. Prepositions assumingly have a consistent syntactic distribution.

Defining Prepositions

Acknowledging the larger difficulty in classifying prepositional forms, prepositions can be classified as only those words that get positioned syntactically in a certain location. Thus they can be defined through syntactic distribution as words that occupy the head position of a prepositional phrase, as noted by [P] in the template provided here: [P [D [N]]], preposition with embedded determiner and object noun.

This position requires the introduction of a new argument [N]. With this simple definition in use, problems with meaning may be at least temporarily suspended, and prepositions will be classified as all words that theoretically appear in this place. This type of definition is more compliant with the Distributed Morphology framework discussed later in this chapter. Moreover, some forms that can be found in this position are shown on Table 1-1.

Table 1-1. Prepositional forms.

Line 1	Line 2	Line 3	Line 4	Line 5	Line 6
About	Atop	Back ⁴	In-front-of	Out-of	To-wards
Above	Away-from	Down	Inside	Out-side	Under
Across	Be-fore	During	Into	Over	Until
After	Be-hind	For	Off	Through	Up
Along	Be-low	From	On	Through-out	Via
Around	Be-yond	In	On-to	To	
At	By	In-back-of	Out ⁵		

The forms appearing in Table 1-1 were mostly taken from prepositions listed in Bennett (1975) and O'Dowd (1998). Moreover, this table is conservative, as one can find prepositional lists that include many more members, such as *concerning* (Lindstromberg 1998) or even *including* and *given* from many online ESL language learning sites (EnglishClub.com) and from unverifiable sources such as Wikipedia. It should also be noted the some of the already mentioned forms Hudson (2000) gives as loanword prepositions are not put in the list. This merely reiterates that there is disagreement or confusion over prepositional members in English. The purpose of the Table 1-1 is not to be an authoritative list but rather to provide a base of forms for analysis. Thus, while Table 1-1 does not reflect the full membership judgment of the author, it will serve to later show that these forms straddle the functional lexical divide. Furthermore, several of the forms are morphologically complex and have been so marked. Table 1-1 consists of single words, compound words, and phrases. These might not be best analyzed as a single form entering the syntax. If all of these belong under the same head, the structure of *p* must be complex as in Svenonius (2008) or lexicalized phrases can be inserted under *p* to act like single prepositions. From a

⁴ Consider: *I traveled back home vs. I traveled home. Back does not appear to actually work as a preposition and probably should not be on the list.*

⁵ Consider: *I threw it out the window* (O'Dowd 1998: 6)

semantic perspective all these forms could be said to be relational in meaning and lack a referent. However, without a syntactic context this may not be true. Without a context they could be argued to have no meaning (Acquaviva 2008).

It should also be noted that some of these words are more commonly used as prepositions than others. The reason for this will not be fully discussed in this paper but Chapter 4 will give a suggestion.

Defining Particles and Defining P-forms

Particles are also a problematic form for classification. The term particle used in this paper refers to the second word in what traditionally has been termed phrasal verbs (*i.e.* the second word in phrases such as *turn on* or *think over*). O'Dowd paraphrases Liles (1987) concisely by calling them "word[s] which may also function as a preposition" (1998: 4). Since particles have the same phonological form as many prepositions, they have been thought to be just prepositions or intransitive prepositions. They are also commonly called adverbs. Moreover, their role as a verbal element and secondary predicate distinguish them from prepositions, which provide Case for a subsequent noun phrase. Den Dikken defines them as "the class of non-Case-assigning, argument taking prepositional elements" (1995:33). Syntactically their distribution is more controversial than prepositions. Den Dikken argues they are the head of a Small Clause (1995: 38). However, in general it is thought that they are positioned somewhere within the verb phrase, and presumably they are not adjuncts to the verb phrase. With this being said, there are some syntactic tests that can help distinguish particles from prepositions (Lindstromberg 1998: 243-54). Only syntactic tests were chosen as syntax was the basis for partitioning prepositions from other words to begin with.

The first test is the *Noun Phrase Insertion Test*: if a noun phrase can be inserted between the verb and the form in question, then the form is a particle.

- (1) a. John started up *a business*.
b. John started *a business* up.
c. John started *it* up.

Since (1b,c) are grammatical, *up* is a particle in this construction. Compare this with (2b,c) in the following example.

- (2) a. John climbed up *the ladder*.
b. * John climbed *the ladder* up.
c. *John climbed *it* up.

Thus *up* in (1a-c) is unlike the *up* in (2a-c) because it can be separated from the verb by a noun phrase. Also as is the case in (1c), if the object Noun Phrase is pronominalized it must move before the particle. This is due to phonological reasons with regards to stress placement⁶. If a pronominalized noun phrase does not move into the between position, it can be said that the form in question is not a particle. The next test, the ellipsis test, is taken from (O'Dowd 1998).

With the Ellipsis Test we can see that noun phrases cannot undergo ellipsis if the form in question is a particle. This is because the argument after a particle belongs to the verb and not the P-form.

- (3) a. I turned off the road at second street.
b. I turned off at second street.
c. I tuned off the light in my room.

⁶ Particles generally receive primary stress (see O'Dowd, 1988: 21)

d. *I turned off in my room.

By the ungrammaticality of (3d) in contrast to (3b), it can be seen again that the two forms are not operating the same way.

While there are cases of opaqueness between the results of these two tests, if a *verb + form* passes the first and fails the second test then the form in question can most reasonably be deemed a particle. As for this paper, the distinction will hold to these tests⁷. Forms that commonly can pass these tests are found in Table 1-2.

Table 1-2. Particle forms in English.

Line 1	Line2	Line 3	Line 4	Line5
Across	Away	Down	On	Out
Apart	Back	In	Over	Up
Around	By	Off	Through	
Aside				

These forms can qualify in terms of both tests above as shown by the following examples.

Forms under (a.) Insertion and (b.) Ellipsis tests:

- (1) a. She got across the information. She got it across.
b. *She got across (the information) in class. 'She was understood'
- (2) a. He took apart the engine. He took it apart.
b.*He took apart (the engine) in his room
- (3) a. I moved around the furniture. I moved it around.
b.*I moved around (the furniture) in the house 'something was moved around.'
- (4) a. I set aside some money. I set it aside.
b.*I set aside (the money) in a separate account.

⁷ See O'Dowd (1998:2-25) for potential counter examples to the syntactic tests given in Chapter 1. However, there may be flaws to the counter examples as well as they represent a small number and do not concern the more general pattern scrutinized in this work.

- (5) a. She pushed away the man. She pushed him away.
b. *She pushed away (the man) on the street.
- (6) a. He paid back his debt. He paid it back.
b. *He paid back (his debt) in January.
- (7) a. She pushed the man down. She pushed him down.
b. *She pushed (the man) down.
- (8) a. The student handed in the assignment. He handed it in.
b. *The student handed in (the assignment) on Wednesday.
- (9) a. The student put off the test. He put it off.
b. *The student put off (the test) last Friday.
- (10) a. I put on a hat. I put it on.
b. I put on (a hat) in the morning. 'to clothe oneself'
- (11) a. He thought over the problem. He thought it over.
b. *He thought over (the problem) yesterday.
- (12) a. She thought through the problem. She thought it through.
b. *She thought through (the problem) yesterday.
- (13) a. He carried out the box. He carried it out.
b. *He carried out (the box) already.
- (14) a. I looked up the information. I looked it up.
b. *I looked up (the information) online.

The selection of the two tests which distinguish these fourteen forms is based upon the idea that the NP is not an argument of the P-form. Thus movement is alright and ellipsis is not. Many grammars, O'Dowd (1998), Lindstromberg (1998) et. al., also mention

inseparable phrasal verbs where the main verb is intransitive. This paper does not intend to say that in constructions such as *pass out* that the P-form is not a particle because the two tests above cannot confirm it. Rather it does not intend to argue for the admittance of a form that only appears with intransitive verbs, since a structural distinction between a particle attached to a intransitive verb and an intransitive preposition does not saliently exist.

The combination of forms found in Tables 1-1 and 1-2 are to be conveniently termed P-forms after O'Dowd's terminology (1998). This classification comes under the simple observation that these two separate grammatical objects often get phonologically realized identically. Thus P-forms are the phonological form common in expressing particles and many prepositions.

The fact that not all prepositions are used as particles will be discussed later. In fact *away* and *back* are the only particle forms that do not get used as prepositions by themselves. However, they will be used as prepositions when joined with words like *from* and *to* to make *away-from* or *back-to*. *Aside* on the other hand could be argued to sometimes operate as a preposition in a sentence like *He found her aside the road*, but this is not as common. Nonetheless what is important is observing the great phonological overlap between the realization of the two different structures and requiring that this overlap be explainable by one's theory of grammar.

Distributed Morphology

Distributed Morphology is a theory of word structure that took root with work by Morris Halle and Alec Marantz in 1993 and 1994. In this theory the domain of morphology was radically changed from previous lexical views. The lexicon was deemed to be unnecessary and the framework of lexicalism was proclaimed to be

“dead, deceased, demised, [and] no more ...” (Marantz 1997: 2). According to Marantz, “the underlying suspicion [of lexicalism] was wrong and the leading idea didn’t work out” (1997: 2). The special meaning of derived words is no greater or different than the meanings that can be assigned to phrases and the properties of words can be better explained through syntactic processes. Words are thus not impervious to syntax and the Lexicalist Hypothesis can be abandoned. However, even with the lexicon abolished, some of its essential components had to be retained. These were split up into three parts.

The Parts of the Old Lexicon Redistributed

With the lexicon removed, there needed to be some additions to the traditional ‘Y’ model of syntax. Traditionally syntax and the lexicon operated separately. After words were formed in the lexicon, they could then be assembled into appropriate syntactic frames, D-structure. However, now the necessary aspects of the lexicon are positioned within sentential derivation. There is initially a component called *List 1 or list A*. In this list are two types of morphemes; bundles of morpho-syntactic features called abstract morphemes and $\sqrt{\text{Roots}}$ (Harley and Noyer 1999:2). $\sqrt{\text{Roots}}$ are often referred to as l-morphemes while abstract morphemes get called f-morphemes (Harley and Noyer 2000). List A supplies these two morpheme types with no phonological features. DM thus proposes that l-and f-morphemes form the “primitives of syntax and hence of morphology” (Embick and Noyer 2005:6). These “items [...] are the ultimate elements out of which words, phrases, and sentences are composed” (2005:6). In contrast to a lexical view (cf. Di-Sciullo and Williams 1987 for a more in-depth lexical account of morphology to syntax) where morphemes are built in the lexicon to form complete

words that are ready for syntax, l-morphemes and f-morphemes are now the building blocks of syntax. Thus, they form the terminal nodes in syntax and their features are present at the beginning of syntactic derivation. After derivation, *List 2 or List B* provides every terminal node with a language specific string of phonological data called a Vocabulary Item, VI (Harley and Noyer 1999:5-6). Vocabulary Items are thus responsible for both representing f-morphemes and l-morphemes. VIs can also be phonologically null. Once provided with phonological material, each morpheme type is searched via a component called *The Encyclopedia*. *The Encyclopedia* is responsible for linking idiomatic meaning to individual forms and recognizing phrasal idioms (1999:8). Thus when *The Encyclopedia* comes across the word 'dog', it possible that 'dog' receives its general idiomatic interpretation, man's best friend, or something else, and if *The Encyclopedia* encounters the phrase *packing heat*, it knows the intended meaning might not be 'to hold or maintain warmth' but rather 'to have a concealed gun.' With these components and a set of core assumption, DM is able to build words and sentences and begin to account for lexical ambiguity all in one system.

Core Components of Distributed Morphology

There are three theoretical assumptions about DM that distinguish it from other morphological theories and make the reduction and redistribution of the lexicon possible: Late Insertion, Underspecification, and Syntactic Hierarchical Structure all the Way Down.

Late insertion: this is the idea that "phonological features are supplied [to morphemes] after syntax" (Halle and Marantz 1994:275). When these features are supplied, they only add "phonological" content and do "not add to the semantic/syntactic

features making up the terminal nodes” (1994:275-276)⁸. Thus while syntax is impervious to phonology, phonology might be affected by the feature arrangements produced in syntax.

Underspecification: this is the idea that Vocabulary Items are not fully specified to represent possible feature sets. In other words “ for a Vocabulary Item to be inserted in a terminal node, the identifying features of the Vocabulary Item must be a subset of the features at the terminal node” (1994: 276). This means that the same Vocabulary Item could represent several different feature sets in a language as is evidenced by the fact that \emptyset represents everything but [[+3rd person] [+singular]] in the present tense subject verb agreement paradigm in English. However, if a VI has a feature that is not present in a terminal node “insertion may not take place” (1994:276). Thus Vocabulary Items cannot add semantic or syntactic features. These stipulations create competition between Vocabulary Items where “the most highly specified Vocabulary Item ... wins ... and is inserted” (1994:276). These ramifications created by the principle of Under specification are interesting in explaining the distribution of P-forms, which will be discussed in Chapter 3 and Chapter 4.

Syntactic hierarchical structure all the way down: this is the final core component of DM. This states that “terminal nodes ... are organized into hierarchical structures determined by the principles and operations of the syntax” (1994:216). The ramification of this is the unification of the components of syntax and morphology. However, this component will not be so important for this present analysis.

⁸ This gets tricky for Roots. If insertion is free for Roots, then there are no semantics at the L-node or within the Root. This means semantic material can be added with the insertion of phonological information into a Root.

P-forms in Distributed Morphology

The structure of Distributed Morphology is well suited for the fact that the phonological form of prepositions and particles is often the same. Similar to providing well for the long standing observation that Verbs can often be Nominal or vice versa, particle forms can double as prepositions. However, as the categorization of P-forms was a problem for more traditional theories it also provides problems for Distributed Morphology. Within DM, the status of prepositions and particles remains similarly unclear.

P and the Building Blocks of Distributed Morphology

As introduced, the theory of Distributed Morphology only divides morphemes into two types. Terminal nodes consist of $\sqrt{\text{Roots}}$ and Abstract Morphemes (Harley 2008: 3). In many cases their division seems easy and natural, as forms operating with traditional lexical properties such as nouns and verbs will be termed l-morphemes and those with grammatical properties will be termed f-morphemes, keeping the old lexical functional divide intact. Thus “the distinction ... is ... related to that between the functional categories and the lexical categories” (Embick and Noyer 2005:5). However, the cleanliness of the split between the two types of morphemes demands attention with regards to membership when looking at a class of forms like P-forms. Similar to the problem these forms give a traditional account, P-forms represent things that straddle the lexical functional divide. If we value Croft’s (1991:2) assertion that one should be able to clearly define the element of analysis, a clearer distinction has to be made as to what l-morphemes are in comparison to f-morphemes.

Basic Properties of F and L Morphemes

DM proposes that “speakers of English memorize $\sqrt{\text{Roots}}$ such as $\sqrt{\text{CAT}}$ or $\sqrt{\text{SIT}}$, as well as the fact that abstract morphemes such as [pl] and [past], [...] are ‘active’ in their language” (Embick and Noyer 2005:6). Moreover, these $\sqrt{\text{Roots}}$ are deemed to be language specific constructions while abstract morphemes “are drawn from a universal feature inventory” (2005:6)⁹. Based upon this description, we can begin to separate f-morphemes from l-morphemes by means of their source. $\sqrt{\text{Roots}}$ come from memorized sets of semantic features¹⁰ and abstract morphemes come from Universal Grammar, UG. Based upon the previous sections, it seems that this dividing line will not be satisfactory with P-forms because some P-forms can represent universal grammatical features and have lexical uses. Therefore, in order to decide if P-forms can be grouped into either list successfully or if P-forms have to be split up, the dividing criteria must be clearer or the existence of new category must be recognized. Thus P-forms also pose a categorization problem for the theory of DM.

Concluding Remarks

P-forms are forms that represent both prepositions and particles. They are difficult to classify because they have both functional and lexical qualities. Distributed Morphology is well suited for explaining the one to many relationship of form to function, however, P-form classification remains uncertain within the initial criteria of DM. Thus a further analysis of how P-forms can be placed within DM is needed in order for this observation to be useful.

¹⁰This is debatable because any features that are associated with the existence of a Root before Vocabulary Insertion could be argued to influence such insertion and for Roots Vocabulary Insertion is argued to be free. This is explored much more in Chapter 3 and 4.

CHAPTER 2 THE ORIGIN OF P-FORMS

This chapter is divided as follows: the introduction presents the classification dilemma of P-forms in DM, P-forms as f-morphemes discusses how P-forms act functionally or need to be classified as f-morphemes and talks about the possible universal features prepositions represent, Particles as f-morphemes talks about particles as functional elements, P-forms as l-morphemes presents arguments for why P-forms should be l-morphemes, Reanalysis of P-forms concisely explicates the need to modify the P-form list, The Homonym Explanation denied argues against calling *up* and *up* homonyms, Reorganization redefines P-forms by separating some members, Categorization presents a Little p_ lexical functional head to categorize l-morphemes, and the conclusion notes standing problems.

L or F Morphemes

Examining the synchronic origination of the P-form category is important to understanding their classification/nature. Since this paper is working with DM, the lexicon is not the point of origin. Origination will therefore be defined as the features or $\sqrt{\text{Root}}$ nodes chosen/present before derivation. Since there are only two types of terminal nodes in DM (Harley 2008: 3), there can only be three logical possibilities for the origination of P-forms: l-nodes¹, f-nodes or both. L-nodes correspond to l-morphemes and f-nodes to f-morphemes. If P-forms originate solely as l-morphemes, then their realization is comparable to other l-morphemes that get categorized as Nouns, Verbs, and Adjectives. If they originate as f-morphemes, then they are

¹ It is debatable if lexical words come from a single $\sqrt{\text{Root}}$ or if list A stores multiple $\sqrt{\text{Roots}}$ that are indexed for specific vocabulary insertion.

composed of morpho-syntactic features and their phonological realization or Vocabulary Insertion is comparable to other functional morphology such as determiners, complementizers, and conjunctions. If they originate as both, then they are either two different things which happen to share the same phonological representation, homonyms, and or some of the forms have incorrectly been put into an undifferentiated list. In the latter case there would be strictly functional P-forms and lexically free 'true' P-forms. Within argumentation, if the source of P-forms is split between I-morphemes and f-morphemes, the P-form list should be modified to explain this. We have to say why the same form appears as both I-and f-morphemes and what, if any, features exist to determine or guide insertion. Examining some of the data can narrow down these possible options.

P-Forms as F-Morphemes

The fact that P-forms represent functional elements, especially when used as prepositions, suggests that they would originate as a bundle of feature(s), from an f-node and not an I-node or $\sqrt{\text{Root}}$. In (1a,b) the forms *up* and *down* theoretically assign Case to their complement DPs as all prepositions are proposed to do under the Case Filter principle of P&P (Carnie 2007:297).

(1) Prepositional Usage:

a. She walked *up* the stairs. She walked up *them*.

b. He walked *down* the stairs. He walked down *them*.

In (1a,b) they could be said to assign a directional locative case, but the label is not too important now. It is only relevant to recognize that the object pronouns in (1a,b) have non-nominative case markings and that this case theoretically comes from the

preposition or *p* to satisfy the subsequent DP's need for Case. If this traditional concept is accepted, it is then not too controversial to say that prepositions serve a specific functional purpose (*i.e.* to assign Case to a phonologically realized DP). Now verbs also assign case but it is not the lexical verb that assigns case in DM and Minimalism, but rather the little *v_* functional head that licenses the I-morpheme in the VP. As this chapter progresses, we will see that prepositions can be the manifestation of a functional head or an I-morpheme that is licensed by the functional head. Nonetheless prepositions on the surface appear to have a grammatical role.

Now it should be noted that often Prepositional Case is put in contrast to Grammatical or Structural Case. Prepositional Case is often referred to as a type of Lexical Case to account for its ostensible idiosyncratic behavior (Anderson 1971). However, in DM there is no Lexicon to put this idiosyncratic information, so if prepositions do assign case, this case must be a feature in the syntax. In DM there is no reason to assume they have lost this functional purpose. The phonological form of prepositions could then be argued to be the Vocabulary Insertion of prepositional case features, semantic as they may appear. Examples of possible prepositional features in English are given here.

Table 2-1. Possible ad-positional case features in English.

To/of	By/for	With/Toward	From/at
+Goal	+Agentive	+Associative	+Source
+Possessive	+Benefactive	+Directional	+Locative

These are not all the features possible in human language. Calabrese (1998) gives more examples for just the Romance languages. Moreover, features as these do not have to cluster identically and some might be absent in different languages, accounting for the well established observation that case systems often do not align

between languages (Mithun 1991: 510). Nonetheless, the features above can determine the P- forms that represent them in English. In the case of (1a), we might first posit a simple rule such as insert the form /up/ to represent the features [+Locative +Dir], which happen to be active in English: /up/ <--> { +Loc, +Dir}.

In the phrase [{+Loc+Dir} *the stairs*], this simple rule directs the form /up/ into the syntactic domain [[p_{+Loc,Dir} [n_{+Def}[\sqrt{stairs}]]]. Of course more will be required to partition the insertion of *up* versus *down* and other locative *p*'s, but in Chapter 3, we will see that this does not have to be a featural issue. Nonetheless when P-forms directly express the features given in Table 2-1, they would originate as f-morphemes under the premise that these features come from a “universal feature inventory” and that this source identifies morphemes as f-morphemes (Embick 2005:6). If these features are universally available, it would explain why so many languages have ad-positional or case marking systems that appear to realize them. For more information on case marking, see Cook (1989). Examples of some of these features represented by case and prepositional systems can be seen in Example (1). First examine the associative feature in Icelandic (Zaenen et al. 1985:464).

- (1) Hann tók vini sínum opnum örmum.
 he took friend his[+REFL] open arms
 ‘He greeted his friend with open arms.’

The instrumental marking seen with *opnum* and *örmum* is argued to be result of an associative feature. The associative feature occurs with “grammatical functions expressing the means associated with an action” (Calabrese 1998: 85). In this case it relates how ‘he greeted his friend’. The preposition *with* accomplishes this in English as shown in the translation, and thus could be argued to also represent this associative

feature. Another example is the representation of noun's location in Latin. This locative feature in Latin can be seen in (2).

- (2) a. Domus
Home-NOM
'home'
- b. Domi
Home-LOC
'at home'

Since Latin lacks ad-positions like English, its nouns get case marked to show their grammatical/semantic relationship. The locational relationship presented by a locative feature in (3b) in comparison to (3a) is expressed by the case marker *i* in Latin and the preposition 'at' in English. However, English is not alone in expressing the features given in Table 2-1 ad-positionally. This can be seen in the expression of the dative feature in Japanese.

- (3) Takashi ga Yumi ni hon o ageta.
Takashi NOM Yumi DAT book ACC gave.
'Takashi gave a book to Yumi'

In Japanese the dative or goal feature is represented ad-positionally. *Ni* like other Japanese post position particles is limited in its distribution and purely functional. The preposition *to* in English also represents this feature in the same functional manner. The functionality of *to* is more evident when the same meaning can be achieved structurally as well, as is seen in English with the dative shift movement.

- (4) Takashi gave Yumi the book.

Takashi-NOM Yumi-DAT book-ACC

In the dative shift example of (5a), the dative interpretation remains without the preposition *to*, meaning the feature is present without a phonological form. This suggests that the feature is already present in the syntax and is only being realized by /to/ in certain arrangements. Nonetheless what is important to agree upon is that the P-forms discussed so far are serving a functional purpose similar to case markings in Latin and Icelandic and Japanese postpositions. Moreover, these case markings and postpositions are deemed to be the result of features present in the syntax and not the presence of an I-node hosting a $\sqrt{\text{Root}}$. Thus it seems reasonable that P-forms that work in this way are functional and that at least some of them originate as f-nodes.

Particles as F-Morphemes

Particles on the other hand lack the structural function that prepositions do as can be seen through their use in (1).

- (1) a. She blew *up* the house. She blew it up.
 b. The wolf blew *down* the house. He blew it down.

Particles are not as clearly functional as prepositions in that they lack the case feature possessed by prepositions. Accusative case is given to the DPs by the verb, not the particle. This argument is positioned on the simple observation that accusative case is given to the complement DP whether the particle is present or not. This can be seen with Example (2).

- (2) a. John beat him.
 b. John beat him up.

Accusative case is assigned to the pronoun regardless of the particle. One might suggest that the verb and particle assign case together in (2b) but it seems better to have case consistently assigned by one thing, little *v_* and not the particle.

Nonetheless, it could be argued that there is a Prepositional Head or Relational Head, as we shall see in Chapter 5, in the *vP* that merely lacks the generic Case Feature and that this Prepositional Head is still functional in nature. The function of the P-form in relation to the object of the verb is not to give it prepositional case but rather a secondary resultative direction. The VIs for *up* and *down* would be like other VIs in that they are underspecified and thus can be inserted in this environment as well as a prepositional environment. For example we could say that a *p_* head outside a verb phrase contains $\{ [+Case][+Loc, +Dir] \}$ features while one inside a verb phrase merely has the $\{ [+Loc, +Dir] \}$ features. Therefore *up* would still be inserted via the rule: $/up/ \leftarrow \{ [+Loc, +Dir] \}$. Again the $\{ [+Loc, +Dir] \}$ feature would need to be subdivided to predict the correct insertion of *down* versus *up*. Thus it is still conceivable that P-forms are just the VI of abstract functional features positioned in the structure of syntax, but doubt is justifiable.

All in all the origination of P-forms as abstract feature bundles or f-morphemes would be in accordance with other functional elements created by morpho-syntactic features as is described by (Embick and Noyer 2005:5-7). Features commonly associated with prepositions such as those listed in Table 2-1 might be able to be divided into more precise features to explain the insertion of all the prepositional forms given in Table 1-1 in Chapter 1. Moreover, positing that P-forms originate as f-morphemes would also be helpful in explaining why I-morphemes such as $\sqrt{\text{dog}}$ not only

never appear as prepositions or particle but are inconceivable operating as such. This observation and issue will also be further explored and reevaluated in Chapter 3. Nonetheless presently there is some motivation to assume a non-√Root origination for prepositions and particles. This would theoretically account for the fact that they share the same phonological form without accident and if this were the end of the story, then P-forms would simply be a case of underspecified VIs, capable of being inserted in either functional domain. Particles would be bleached prepositions.

P-Forms as L-Morphemes:

In contrast to the above section, the evidence that P-forms are l-morphemes is fairly strong. Assuming non homonym origins, if there are no P-form VIs for l-nodes, then we would expect all P-form VIs to correspond with identifiable feature bundles held under (a) functional node(s). That is those feature bundles constructed from the features given in Table 2-1. This would suggest that these forms would not appear in other places because other places would not possess the feature(s) necessary for P-form Vocabulary Insertion. However, Examples (3-11) present a different story. It can be seen that the same P-forms *up* and *down* that were used to represent the proposed f-morphemes in the previous section have a much wider syntactic distribution, a distribution that lacks identifiable functional features. Examples (3-11) show P-forms appearing in different syntactic domains. In (3a,b) a verbal usage is seen.

- (3) a. The doctor *upped* the dosage.
b. The doctor *downed* a whiskey.

It should be noted that these examples share the argument structure of related verb particle constructions: *The doctor pushed the dosage up* and *the doctor drank a whiskey*

down. Whether the forms /*up*/ or /*down*/ are directly inserted into a $\sqrt{\text{Root}}$ under *little_v* or get there derivationally will not be argued. Regardless, other f-morphemes do not work their way into such positions in English. The sentence, /**ored her*, with the meaning 'I gave her a choice' is not possible or the sentence, /**thated*, with an unknown meaning is also ungrammatical. Moreover, P-forms that do not get used as particles such as *behind* can take a nominative interpretation.

(4) Move your behind. 'Move your buttocks'

In (4) the word 'behind' is used as a noun but its source position cannot be a particle because your 'behind' is *behind you* not *you behind* and if it is from a prepositional position, then this preposition has to be lexical as functional elements should not be able to move under other lexical functional heads, in this case *n_*. Again this paper will not argue if the P-form is directly inserted under *n_* or moved there. However, that discussion could be valuable in the future. Moreover, we also see P-forms acting like adjectives.

(5) a. The *uppity* teenager was rebuked.

b. ?She is *down* for the party. 'She is ready or willing to party'

In (5a) it would be difficult to see where the form /*up*/ comes from other than being directly inserted under the lexical node *a_*. (5b) is less clear. Nonetheless the form /*up*/ maintains its core meaning. Someone who is *uppity* might need to be slapped down. The relational contrast to *down* is maintained while the form is under *a_*. There are also cases where P-forms get used as nouns.

(6) a. That basketball player has some *ups*. 'He can jump High.'

b. How many *downs* in football do we get for every possession?

Again in (6a,b) the P-forms are found in a nominal position. This time it is possible that they are derived from particle usage. (ex. He really jumped (himself) up high. Yes, he's got some ups. The football team has been taken down four times. The possession is finished. The other team took them down.) Nonetheless what is interesting is that the P-forms have acquired nominal characteristics such as countability *downs* and collectiveness *ups*.

Moreover, *P*- forms are also subject to other morphological processes common to *I*-morphemes and not *f*-morphemes. Examples (7-11) show *P*-forms creating deverbal nouns, compounded prepositions, compound nouns with left adjoined *P*-form, compound verbs with left adjoined *P*-form, and compound nouns with right adjoined *P*-form:

- (7) a. The *upper* the doctor gave was great.
b. The *downer* made her drowsy.
- (8) a. She moved *upstage*.
b. He moved *downstage*
- (9) a. They *upgraded* my seat.
b. They *downgraded* the threat status.
- (10) a. Last night's victory by the inferior team was an *upset*.
b. Rain is frequent but that was quite a *downpour*.
- (11) a. The *setup* of the game requires time.
b. Did you see that amazing *touchdown*.

From examples (3-11), it is clear that the forms up and down can be used in many different syntactic contexts and that they can obtain many different traditional syntactic

categories as well as merge with other $\sqrt{\text{Roots}}$. This behavior is not seen with the phonological forms used for other f-morphemes. Determiners and conjunctions do not display any such distribution, suggesting a clear difference between what can elicit a P-form and what can elicit other functional elements. Thus having a-categorical $\sqrt{\text{Roots}}$ such as $\sqrt{\text{up}}$ and $\sqrt{\text{down}}$ in list A, which can merge with the different lexical functional heads $n_v_a_$, is useful in order to explain such behavior. This requires that at least some P-forms such as *up* and *down* be considered I-morphemes like *dog* and *walk*. Moreover, this proposal would be in line with the assumption Svenonius makes when suggesting that the category “P in a language like English must be lexical” when viewing an “explicit theory such as those of Marantz (2001) or Borer (2004)” (2007: 64). However, such a proposal will still require a resolution with the results that came from the previous two sections, which indicated that P-forms originate as f-morphemes. The functional aspect of P-forms is evident too.

The Reanalysis of P-Forms in DM

Due to the data and arguments of the previous three sections, the list of P-forms given in Chapter 1 has to be revised. This accords with Hudson’s (2000) assertion that prepositions have a divided lexical functional nature. He says, “if this is right, some prepositions are content words and some are FWs [function words]” (2000: 17). This will be done instead of giving a homophonous explanation because a homophonous explanation says using the same form functionally and lexically is an accident, that there is no semantic motivation, and that all functional forms have an equal shot at having a lexical twin.

The Homonym Explanation Denied

Homonyms are two different words with identical phonological forms. What is meant by different words is that they have clearly separate meanings. This could be from two different historical words achieving the same phonology by more or less accident such as *bat* 'the flying mammal' and *bat* 'a club like stick' or one word undergoing severe semantic drift such as *bank* 'the financial institution' and *bank* 'edge of a river' have perhaps done. Either way the two words do not share a semantic core that can be easily explained. Most speakers would say they are separate words². However, the *up* used in examples (3-11) above has arguably the same core relational meaning as the *ups* in *John walked up the ladder* and *John blew it up*. There is the concept of movement from a low to high position. In this way *up* has a semantic field similar to high. *Up* like many P-forms is certainly polysemous but not homonymous as the other examples are. Some of the P-forms might turn out to have a homonym functional partner, but as with *up* this is not always the case. Thus all P-form instantiations of both functional and lexical representation cannot be written off as mere homonymy. Thus to maintain some elegance, a homophonous form analysis will be rejected as much as possible. Since P-forms carry similar semantic content regardless of their functional or lexical use, homophony will not be the best analysis.

Reorganization and True Prepositions.

Since homonymy is not at least always the case, there has to be a way to have I-morphemes represent f-nodes to support the observation that P-forms are the phonological representation of a functional distributional class in English and to explain

² This is the judgment of the author who has no on-hand scientific evidence to justify such a claim.

their wider nonfunctional behavior. However, the nine forms found in Table 2-2 will be partitioned from the rest because they lack syntactic and morphological flexibility to justify ever being I-morphemes. Moreover doing this reduces English's once large prepositional inventory and better aligns it with the smaller ad-positional inventories found in languages such as Japanese and many of the Bantu languages. If reason for this partition holds, we can then have a clear division between true functional prepositions and P-forms. The forms separated can be seen in Table 2-2 where the number of "true" prepositions has been reduced to nine members³.

Table 2-2. Phonological forms that only serve to mark prepositional case.

Line 1	Line 2	Line 3	Line 4
At	Of	From	For
By ⁴	To	With ⁵	a ⁶
Via			

The first interesting thing to point out from Table 2-2 is the inclusion of 'a.'

Historically *a* is the result of the old preposition 'on.' As a functional item it lost its full pronunciation and has been reduced to schwa in modern English. This is why so many prepositions start with *a* in English. Moreover, many of the forms from Table 1-1 in Chapter 1 have been reanalyzed as single forms. In fact it could be argued that all the forms that have this historical derivation have been reanalyzed as single forms.

However, this paper will entertain the notion that *a* is active as a possible representation for the functional head *p_*, which will be discussed later.

³ It is the belief of this paper that a similar thing is happening in any language that appears to have a bloated list of ad-positions

⁴ The form *by* refers only to its agentive use.

⁵ The form *with* only refers to its instrumental/associative usage.

⁶ [a] is the result of a historical process and could be viewed as an allomorph of *at*. It could be the functional representation of a [+Locative] feature

These eight forms + *a* will no longer be considered P-forms because they only appear as prepositions. Examples such as “*look at*” or “*run by*” do not pass the particle tests given in Chapter 1 such as the *Noun Phrase Insertion Test*:

(11) a. John looked at the store. *John looked it at.

b. John ran by the store. *John ran it by.

This means that particles will not be considered f-morphemes like prepositions in that they have no case assignment function. This also means that some adverbial elements that never get used as prepositions should be able to function as particles such as *away* and other similar terms.

Moreover, another behavioral distinction between Table 2-2 and P-forms is that the forms that represent true prepositions do not attach to other Roots productively. Ostensible counter examples are found with the form *with* in *withdraw* and *withhold*, but these words are fossils of when *with* was lexical, meaning ‘against’. One might also consider *by* because of the words like *bylaw*, but its etymology would seem to preclude such a proposal as this word comes from the Old Norse “*bi-lagu*” ‘town law’ when the form *bi* had a different meaning (Online Etymological Dictionary 2010). Moreover, none of the seven forms appear normally as nouns or verbs: **ats-atted*, *bys-byed*, *ofs-ofed*, *tos-toed*, *froms-fromed*, *withs-withed*, *fors-fored*. Now it should be noted that not all P-forms are used in all lexical positions as *up* is. Membership in the P-form class requires that the phonological form maintain some lexical and functional duality while maintaining an arguably similar meaning.

Therefore, the proposal is that the forms in Table 2-2 will only be inserted to mark prepositional features when a categorized $\sqrt{\text{Root}}$ is not present. The other forms or true

P-forms are a-categorical, as the data from P-forms as I-morphemes suggests. They can thus appear in many syntactic domains including that of a preposition. Traditionally this multi-categorical nature could also be explained by having a lexicon with several copies of words such as *up* and *down* or by implementing conversion rules, including \emptyset affixation. However, within DM all that is required is a single $\sqrt{\text{Root}}$ being inserted near a categorizing head. Since generally the only listed functional heads capable of giving a syntactic category are $n_$, $v_$ and $a_$ (Trias 2009:1), this paper proposes that a fourth lexical functional head called little $p_$ be added to the list. This seems to accord with the category p that is proposed in Svenonius (2008). He defines this functional head as “the natural locus of relational notions of containment, attachment, and support which are commonly expressed by prepositions ... cross linguistically” (2008: 8). In DM, if little $p_$ can be included with the other established heads, all multi-categorical P-forms can be elegantly classified as I-morphemes.

Categorization by Little $p_$

To review, DM postulates that all I-morphemes are a-categorical by nature. To achieve a syntactic identity, $\sqrt{\text{Root}}$ s or I-morphemes must be positioned in a structural relation to a functional head or f-morpheme capable of assigning a category. L-morphemes cannot exist without a categorizing functional head (Embick and Noyer 2005: 5). This relationship is usually described as an f-morpheme immediately c-commanding an I-morpheme. Furthermore, it should be noted “that the traditional terms for sentence elements, such as noun, verb, and adjective, have no universal significance”, within the theory (Harley and Noyer 1999:4). Rather these terms are convenient labels that are “not present in the syntax” (4). Nonetheless, DM still uses the traditional labels to discriminate between the three commonly accepted category

assigning functional heads: n_, v_, and a_. In this way DM can recognize that such labels are not necessarily universal but that I-morphemes do obtain similar identities given certain placement. It can be inferred that while these labels are just labels and kept for convenient communication purposes there must be universal features distinct enough for us to want to retain the labels, as Baker (2003) argues.

P-forms get categorized as other I-morphemes get categorized. However, when they operate as prepositions, the features under the p_ terminal node check with the selected $\sqrt{\text{Root}}$ that p_ immediately c-commands. This means that like other categorizing functional nodes, p_ has selectional requirements as to which $\sqrt{\text{Root}}$ s can be merged and categorized with it. The inclusion of selectional requirements is not salient in DM and the general spirit of the theory seems to avoid them. However, they do seem to creep into the discussion because of necessity (Harley and Noyer 2000, Siddiqi 2005, and Harley 2008 for licensing possible VIs). Selection requirements are further explored and developed in Chapter 3 and 4, but for now we must note they have to be stricter in the case of prepositions. This is why we do not see very many new $\sqrt{\text{Root}}$ s being used as prepositions. The basics of this are shown here.

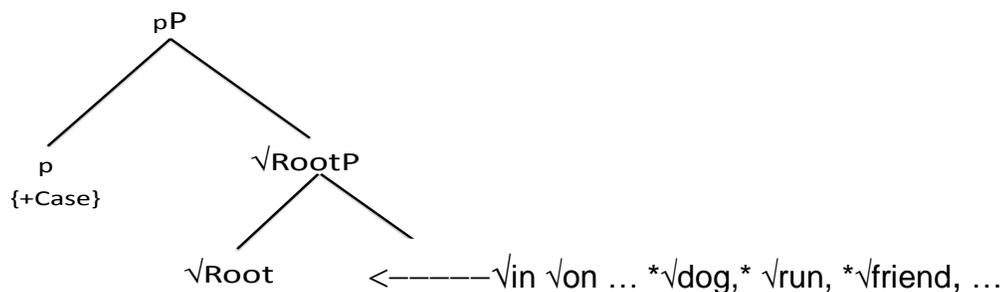


Figure 2-1. Categorization by little p_.

If a $\sqrt{\text{Root}}$ is in the proper structural relation to little $p_$ before VI, then insertion will be limited to the appropriate VI form depending on the context and feature checking. The nature of this will be investigated in Chapter 3.

Concluding Remarks

The struggle to classify prepositions and particle neatly within older grammatical frameworks is understood. Since many of the forms that mark prepositions and particles in English are so lexically flexible, a new way to organize them was needed. With this being so, the theory of Distributed Morphology provides the framework necessary to explain why one form can be synchronically used to represent different functions. In doing so, the list of P-forms needed to be revised to account for the different lexical flexibility of its so called members. The results are good in that now there is a grammatical explanation for the old observation that prepositions in English are semi-lexical and that the class is relatively closed. We now have a small functional list of forms that only behave as prepositions and a larger list of forms that can realize prepositions as well as other functional heads. Thus prepositions remain functional and I-morphemes remain relatively free to appear in many syntactic domains. However, now it must be shown clearer why certain I-morphemes fail to get categorized by little $p_$.

CHAPTER 3 THE CONTENT OF ROOTS, VOCABULARY INSERTION AND CATEGORIZATION RESTRICTIONS

This chapter is organized as follows: the first section, Need for Restriction, introduces the notion of different levels of grammaticality. There are well formed sentences, there are ungrammatical sentences and there are semantically deviant/odd sentences. It also talks about form flexibility and that not all lexemes have equal distribution across grammatical categories and that this distribution might have to do with semantic structure and a general conservative property of language. Following this, the next section reexamines the vocabulary insertion of L-morphemes to see if restrictions can be feasibly added. The section after examines the possibility of having restrictions based upon properties of different $\sqrt{\text{Roots}}$. Then there is a discussion on how features external to the $\sqrt{\text{Root}}$ might influence insertion. The section following looks at the features of categorizing functional heads to see if they can reasonably supply features to the $\sqrt{\text{Root}}$. Then the chapter looks at other possible cases of l-morphemes acting like f-morphemes to justify this as a part of the general DM theory. The section after that gives a small historical account of a P-form used as both a lexical and functional item before becoming fully grammaticalized. This relates the notion of semi-lexical to grammaticalization and the fact that the grammar cannot easily explain forms that operate in the middle. Finally the conclusion calls for a better description of the mechanism or mechanism(s) responsible for Vocabulary Insertion control.

Need for Restriction

The a-categorical nature of I-morphemes is a very appealing aspect of DM, as so many base forms can appear in different syntactic frames in many languages¹. Moreover, syntactic labels do not have to be equal cross linguistically because these things don't exist absolutely within the theory. In other words, Japanese grammarians can insist something is an adjective even though it functions more like an English verb. The existence of a-categorical forms works well with the observation from Chapter 1 that the phonological form of most particles is the same as prepositions. However, it is also true that form flexibility, the acceptability or use of a phonological form in different syntactic positions, is not the same for every form. In other words a form, a VI, does not always naturally or easily coincide with the perspective given by a licensing functional head such as a_, v_, n_, or p_. This means one cannot expect an I-morpheme to occur in all syntactic positions with equal probability. There seems to be rules and or semantic inhibitors that influence the probable distribution of I-morphemes. Otherwise distribution inequalities are mere accidents. In some cases what might seem like a distribution inequality is just an accident, but to deny any connection between universally shared concepts, even if the edges of such concepts are fuzzy, and grammatical categorization seems like an unnecessarily harsh rebuke of every grade school grammar book that teaches nouns are people, places, or things. We know this is not the full story but there is a pattern. All people, places and things to have existed inside the English language have had an attested nominal usage, 100%. Can we say the same as for things and attested verbal usage?

¹ This observation is of course not unique to DM alone.

Categorization inequality is perhaps related to the observation that not all forms associated with certain syntactic categories are borrowed with equal ease (Haugen: 1950: 224). As far back as Whitney (1881:19-20), loanword flexibility could be scaled as Noun>Verb, Adjective> Adverb>Preposition, meaning nouns are most often borrowed and prepositions least. One reason of course has to do with need, new inventions and novel items require new words to be coined, but given our theory, DM, these new forms should be able to find their way under other functional heads as well. The trend seems to be for loanwords to stay in the categorical frame they get introduced in or imported from. As Haugen points out, “if loanwords are to be incorporated into the utterances of a new language, they must be fitted into its grammatical structure” (1950: 217). Thus if the borrowing language lacks the source languages grammatical distinction, a loan words grammatical category will have to adjust, but if both languages have the same distinction, it is most natural for borrowing to adopted as it was, “nouns are adopted as [...] nouns, and so forth” (217). Perhaps there is a conservative inhibitor in the grammar that keeps the form as it was and not what it could be. There is a type of natural categorical loyalty to the input. The reason for this conservation should be considered as it might be similar to the reason why lexical flexibility surfaces unequally. However, this will not be explored here. This is only a generalization as there can be exceptions and the form over time may become more flexible. In a language such as English where it “has been comparatively easy to add adjectives and verbs to nouns, because of [their] convertability ... without any change of form”, we see that loanwords do add to their range of usage (1881:20). One might be tempted to say they work their way into the native vocabulary stratum. However, this doesn’t always happen in English. Many

Native American words have been long borrowed without attested changes in categorical usage, such as ‘tobacco’ and ‘moccasin’. Moreover, the Japanese loanword *Karate* does not get used as a verb in English². The point is I-morphemes do not always appear in all locations governed by a lexical functional head and borrowed words tend to exemplify this pattern.

Loan-word categorization tendencies might not be related to native word categorization tendencies, but if we take a $\sqrt{\text{Root}}$ such as $\sqrt{\text{apple}}$, its use in a verbal or adjectival frame is abnormal in English. If you go to (<http://www.verbix.com/webverbix/English/apple.html>), you will find it conjugated, but this is for the Macintosh ‘Apple’ computer and not the fruit. Moreover, you will struggle to find any examples of this use via search engines. Its abnormality can be seen by the novelty of the sentences in (1b) and (1c) in comparison to (1a) where a normal placement of $\sqrt{\text{apple}}$ is seen.

- (1) a. Apples are food.
b. ?I appled the food. ‘to give the food an apple flavor’
c. ?The food was appley. ‘the food was apple flavored.’

The reason for this lack of distribution may involve two things: grammatical categorization or semantic probability. In this case it seems to be semantic probability that is to blame for the awkwardness of (1b,c). In other words the meaning of apple has been contained within a small conceptual frame (Fillmore (1976) for more on semantic

² Note the compound form *karate-chop* though.

frames)³. An argument will be that generally the hyponym term is more restricted than its hypernym, because the hyponym is a more specific instantiation⁴. Thus, *time* gets used as a verb and a noun but *hour and minute* do not, *chair* can but not *armchair* or *stool*, *dog* can but not *Dalmatian* or *Terrier*, *clothes* can but not *shirt* or *pants*⁵. It is important to note that as for the grammar all of the above forms might get used as both nouns and verbs, but that the probability of this happening is lower than hypernyms of high frequency. Now consider the two incorrect sentences in Example (2).

- (2) a. ***I got a bad grade apple my test.
b. *I got a bad grade in my test.

There is something drastically more incorrect with Example (2a) than (2b). This may accord well with the notion of Levels of Ungrammaticality. Example (2a) is inconceivable as a single sentence. It makes no grammatical sense. Everything we know about *apples* forces us not to use it as a preposition. (2b) on the other hand is easier to understand as the only problem is the preference of “on” instead of “in” in this case. The proposed difference in the level of ungrammaticality is (2a) only has a semantic or association problem while (2b) has a real grammatical error, a phonological form that cannot be relational or the insertion of an illegal VI. Now consider the word ‘*bottom*’ in (3).

- (3) *? I found it bottom of the lake.

³ It has been brought to my attention that if one goes to pick apples they might call it “applling.” This is great for the theory of DM as it predicts this possibility. However, it does not predict why it is not common or why we have apple pickers and not appllers.

⁴ This could be comparable to the chicken and egg causality dilemma.

⁵ Pants is used as a verb, meaning to pull someone’s pants down as a joke. However, this is not widely used or accepted.

This will appear ungrammatical because of the omission of 'on', which normally appears under *p* in this construction. *Bottom* is normally used as a noun but the semantics of *bottom* have a relational implication. The reason that this is ungrammatical is different than both (2a) and (2b). In theory it should be comparable to (1b,c). The meaning should be alright but the form is not used under little *p* , and this makes its initial acceptance strange, a general conservative property of language. However, there is no reason why 'bottom' couldn't be used as a preposition when 'atop' is. Thus it is a prediction that 'bottom' or 'abottom' is a candidate for little_ *p* . However, in cases such as (2a) there has to be a harsher restriction as *apple* is not a candidate. This requires a more in depth examination of Vocabulary Insertion at L-nodes in order to find possible ways to account for this information.

L-Morphemes and Vocabulary Insertion

The idea that I-morphemes are completely free for vocabulary insertion is debatable within the theory. According to Harley and Noyer, "an I-morpheme is defined as one for which there is a choice in spell-out" (1999:4). This either allows for the insertion of any Vocabulary Item capable of being placed under an I-node or a subset of them. Harley says that "Root Vocabulary Items are also subject to competition, though much less obviously so than feature bundles" (2008: 5). This competition could ostensibly be brought on by the presence of features. However, the determination of what if any features are present in I-morphemes before Vocabulary Insertion is also controversial. Some claim that I-morphemes have phonetic features and semantic features throughout the derivation (Embick and Noyer 2005), which would seem to precisely determine their representation. Others think they should be completely underspecified (Acquaviva 2008), allowing for many choices at Late Insertion. There

also may be middle ground where the realization of I-morphemes is only partially determined. This seems intuitive because there seems to be levels of ungrammaticality, meaning some insertions seem worse than others. This will be looked at further. Nonetheless, if the middle ground is taken, $\sqrt{\text{Roots}}$ or I-morphemes would not contain fully deterministic features. Therefore, not all VIs associated with $\sqrt{\text{Roots}}$ would be available for insertion. Instead a subset of VIs could be inserted.

$\sqrt{\text{Root}}$ Based Restriction

If indexing is present in $\sqrt{\text{Roots}}$ this would prevent the insertion of *Dog* in a noun phrase where *Cat* is desired. This does not seem desirable because there would then be no choice at Spell Out. This indexing would make the Vocabulary Insertion of $\sqrt{\text{Roots}}$ competition free. If $\sqrt{\text{Roots}}$ or I-morphemes contain semantic features as is indicated by Halle and Marantz (1994) then their realization is not arbitrary and may still involve choice. In principle if there are any features that differentiate one I-morpheme from another, then Vocabulary Insertion can begin to be controlled. The question is then how many features can be put into a $\sqrt{\text{Root}}$ in *List A* before it begins to appear like a lexicon. These features would need to be few and well established. If one $\sqrt{\text{Root}}$ contains the feature [+locative] while another contains { [+animate] [+count] }, then it is easy to have a VI insertion rule that states: /in, on, under etc.../ \leftrightarrow { [Root] [+locative] } and /dog, cat, mouse etc... / \leftrightarrow { [Root] [+animate] [+count] }. With these rules in place, it would have to be stipulated that the VI /dog/ could never realize an I-morpheme c-commanded by a little $p_{_}$ head because only I-morphemes with prepositional features such as [+locative] could be hosted there to begin with. On the other hand, /up/ would still need to be able to be dominated by a little $n_{_}$ head. Thus a little $p_{_}$ head would need to be more selective in the type of I-morpheme it can dominate

than little n_* . Another rule or list might be needed and this would amount to two versions of up . Of course this is not desirable. Nonetheless this type of restriction placed on the realization of I-morphemes would be due to a property of the I-morpheme itself and thus be internally motivated. Without further analysis, it is unclear how many semantic features would be needed to make everything work if it could all work.

If positing semantic features in an I-morpheme is rejected, there is also the idea that “roots are equipped with class diacritics” (Acquaviva 2008:1). According to Embick and Halle, we can “specify[...] each Root for a diacritic feature that encodes membership in a specific class” (2005:46). If this is the case then it seems just as reasonable to posit that some I-morphemes might contain a category feature if this cannot already be determined by class features. The solution would be to say all P-forms possess a diacritic and thus a $\sqrt{\text{Root}}$ under a little p_* would inherently be different than other $\sqrt{\text{Roots}}$ in the derivation by means of this diacritic feature: /in, on, under etc.../ \leftrightarrow { [Root]p}. This also does not seem like it would work. This reasoning runs counter to the general lexical decomposition hypothesis core to DM. In the general spirit of DM, less is more. The proposal that there are features or diacritics in a $\sqrt{\text{Root}}$ would be increasing the bulk of List A, making it appear more like a lexicon. Acquaviva asserts that, “representing diacritics directly on roots is conceptually problematic” because “if a root has a feature that presupposes a category, then it is not really category-free” (2008:2). If we agree with Acquaviva, I-morphemes can be deemed to be featureless, meaningless place holders. Anything that could differentiate $\sqrt{\text{Roots}}$ for insertion restrictions should start $\sqrt{\text{Root}}$ externally.

Possible External Restrictions on Roots

If I-morphemes are proposed to be featureless (Acquaviva 2008), meaning there is only one instantiation of $\sqrt{\text{Root}}$ in List A, then perhaps VI insertion is restricted by features present under the categorizing nodes. This proposes that the features that give a functional categorizing head its identity can restrict Vocabulary Item insertion. In other words there can be stipulations placed on VIs in c-commanding relationships to certain functional heads. The feature(s) that makes little p_{-} a unique functional head will be used to dictate what I-morphemes can be c-commanded by it. In this case rules for the insertion of VIs for I-morphemes could be written with environmental considerations. A very simple rule might look like this $/P\text{-form}/ \leftrightarrow \sqrt{\text{ / [} p_{-} \text{]}}$ (where p_{-} is a functional head that c-commands). Remember p_{-} is just a label to mark the presence of a prepositional case feature. While in the case of little n_{-} , v_{-} or even a_{-} , the rule would be even more expansive: $/P\text{-forms} + \text{non-P-forms}/ \leftrightarrow \sqrt{\text{ / [} v_{-}, n_{-}, a_{-} \text{]}}$ (where the c-commanding functional head is listed). Now obviously these rules do not stipulate what form exactly will be inserted, but rather they stipulate what forms will not be inserted. This can't be the final solution either. However, this is better than the internal constraint as it still predicts there to be choice for VI while clearly stipulating that P-forms can become both nouns and prepositions while non-P-forms cannot. However, it does seem problematic that rules such as these would limit certain forms from being inserted under a functional head without clear reason. How does the grammar know the identity of the functional head or what forms are P-forms?

Categorizing Heads and their Features

It would seem reasonable to question the need for postulating the existence of categorizing heads when as mentioned in Chapter 2, DM does not assume absolute

syntactic categories. In other words, why do I-morphemes have to have a category when we do not universally recognize them? The reason for this is that I-morphemes would be meaningless without categorization. Acquaviva (2008) argues that meaning is dependent on perspective and without categorization I-morphemes acquire no perspective. Thus in theory little n_ would impose a referent reading on a $\sqrt{\text{Root}}$, little a_ a comparative or quality reading, little v_ an event, and little p_ a relational reading. Thus the Categorization Assumption of Embick and Noyer (2005: 5) remains central: I-morphemes need a functional head to be realized and moreover to be meaningful. However, it is not fully evident what features are present in the functional heads that are proposed to categorize I-morphemes. Perhaps in accordance with Baker's (2003) defense that nouns, verbs, and adjectives are universal categories, the labels n, v, and a are almost always listed as examples of categorizing heads, but it is unclear if there should be a [+nominal] feature in the UG inventory. Moreover, out of these potential categorizing heads, Harley says, "the most well-studied head of this type is the verb-creating v^o"(2008: 5). This has led to the recognition that v has several "varieties" such as BECOME, CAUSE, and DO (5). However, it is uncertain whether these varieties of v are caused by identifiable features as is suggested by Harley (2006) or if a [+become] is the actual feature that can define this categorizing head. In other words, does a [+become] feature exist in the syntax? Acquaviva (2008: 1) says "where [n] and [v] are syntactic functional heads" it is "grammatical content [that] defines a nominal and a verbal domain" and Harley (2008 : 5) suggests that categorizing features are semantic. For this paper, the claim will be that these heads must have features to exist and that these features could be either semantically or grammatically understood. Furthermore,

their presence influences a $\sqrt{\text{Root}}$ before Vocabulary Insertion. How this exactly works is the focus of Chapter 4. However, if this is only a problem in English then we can be doubtful that such restrictions exist in UG. However, there are other cases of apparent non-homonymous forms being used in both functional and lexical positions.

L-morphemes as F-morphemes in Other Languages

Other than the P-forms, previous work has recognized that Vocabulary Items used to normally represent l-morphemes sometimes get used in other languages to represent f-morphemes. Look at the nouns being used as classifiers in Vietnamese data provided by Acquaviva (2008: 12).

(4) a. *hai cái bao*

two thing bag

'two bags'

b. *hai bao cam*

two bag orange

'two bagfuls of oranges'

In this example the form *bao* is used as a noun in (3a) and then gets put in the classifier position in (3b). This supposedly would be a case where a VI associated with l-morphemes is representing an f-morpheme, as classifiers are generally considered a type of f-morpheme. Acquaviva (2008: 13) also gives two example lexical items from German that can be used as prepositions. *Laut*, the German word for 'sound', can be used to as preposition to mean 'according to' and *kraft*, the word for 'force', can be used to mean 'by means of'. This can be seen in Example (5)⁶.

⁶ My thanks to Dr. Jules Gliesche for the examples and the assurance that Germanologically the use of *Laut* 'sound' makes perfect sense in this prepositional role.

(5) a. *Laut dem Bundesfinanzminister ist der Staat pleite.*

According to the finance-minister is the state broke

'The state is broke according to the finance minister.'

b. *Kraft des Gesetzes ist finanzielle Unabhängigkeit*

By act of the law is financial independence

ab sofort verboten.

Immediately forbidden.

'Financial independence is hereby forbidden by law.'

However, in Kortmann and König's (1992: 672) account of deverbal and denominal prepositions in German, the nouns *laut* and *kraft* among others are listed as denominal prepositions. Kortmann and König show that the process of verbs and nouns becoming prepositions is historically quite attested via grammaticalization. Thus it might be expected that the use of the same form in both functional and lexical frames is a precursor to grammaticalization, a phase in the evolution of language. Moreover, it is uncertain how long a form usually straddles the semi-lexical position in the grammaticalization process. Furthermore, there is nothing that says it must eventually be adopted into the greater I- and f-morpheme categories. Nonetheless, if these forms are synchronically being used lexically and functionally like P-forms, we can conclude that I-morphemes get used as f-morphemes in more than just English and that this is a common process. Comparing present day P-forms to the general greater process of grammaticalization seems to flow well with the history of English.

Historical Derivation of English Prepositions

The English language historically was more synthetic, relying on case markings to show the relationships between noun phrases. As it changed into an analytic language,

losing some inflectional marking, lexical words took over necessary functional roles. According to Smith, “most prepositions in Present-Day English derive ultimately from adverbs” (1996:154). However, the switch was slow as forms used only as prepositions today had both adverbial and prepositional uses. Also there was a stage where both case markings and the prepositions existed side by side (1996:155). This stage of the language can be seen with an example from Old English where *tō* can operate either as an adjunct or as a necessary preposition. Smith (1996:154) shows this with this example.

- (6) a. Hē cwæp þœm mannum tō
 He spoke the men to
- b. Hē cwæp tō þœm mannum
 He spoke to the men

Smith asserts both (a) and (b) can “be translated into Present-Day English as ‘He spoke to the men’ but it is possible to parse *tō* as either an adverb or a preposition” (1996: 154). This is because it can be optional. Moreover, Smith goes on to say that “the adverb *tō*, in Old English, an ‘extra’, ‘adjunct’ element in the clause with a *lexical* function, has in Present-Day English become an essential grammatical word” (1996: 154). This agrees with the analysis that P-forms are I-morphemes working in functional positions because there was a time where *tō* was doing the same. The implications might suggest that P-forms will continue to be grammaticalized. However, the opposite might also be argued (Ramat (1992) for arguments for degrammaticalization and Haspelmath (1999) for why this can’t happen).

Concluding Remarks

The probability of a l-morpheme being represented by a particular VI depends on the functional head that licenses it. This probability is not accident but the result of some sort of conceptual organization, witnessed by observable patterns in language. If insertion into an L-node needs to be controlled then it is better within the theory of Distributed Morphology to have this control positioned external to the $\sqrt{\text{Root}}$ itself. Moreover, there is evidence that other languages use the same form in both lexical and functional positions. If this is so, they too would require some sort of control placed into the grammar because not all lexical forms can work as classifiers in Vietnamese nor all nouns as prepositions in German. This control mechanism needs to be better defined in theories such as Distributed Morphology. Moreover, if this mechanism is understood, it can help us understand grammaticalization from a synchronic perspective. It seems unreasonable to believe that grammaticalization suddenly requires a form one day to be forever functional. Rather it seems natural that the form will go through a period of straddling the fence.

CHAPTER 4 GRAMMATICAL RESTRICTIONS THE ENCYCLOPEDIA AND SEMANTIC RESTRICTIONS IN PRACTICE

This chapter is divided as follows: the Methods for Restriction returns to the idea that there needs to be inhibitors to Vocabulary Insertion. It suggests that this can be done with two filters, a grammatical filter and a semantic filter. The next section introduces the idea of the strict or Grammatical filter. How this works is then shown with the use of the proposed lexical functional head p_+ . The features of p_+ restrict insertion as Chapter 3 found external based restrictions best. The section after shows how insertion works for p_+ when no $\sqrt{\text{Root}}$ is present. Then the Encyclopedia is discussed as a component that might influence which Vocabulary Item is chosen. The next section discusses the idea of a semantic filter that is powered by the Encyclopedia. This filter is responsible for deciding what form is best from the context, given that there is still choice for insertion at a lexical node. This is applied to the insertion of P-forms. The next section then briefly looks at a slightly alternative view for restricting the insertion of $\sqrt{\text{Roots}}$ and notes that others have noticed the need to explain ostensible functional forms operating in lexical domains.

Methods for Restriction

The DM model has no present way to explain why only some VIs can be inserted in $\sqrt{\text{Roots}}$ dominated by certain f-nodes, the reason *apple* cannot be inserted under little p_+ as was shown in Chapter 3 (2a). To explain this, specific rules must exist in the grammar. Restrictions places on Vocabulary Insertion seem best motivated external to the $\sqrt{\text{Root}}$ of insertion. A proposal of this thesis is that the Vocabulary Insertion of $\sqrt{\text{Roots}}$ must have restrictions and that this involves two filters within DM: a grammatical filter and a semantic filter. The grammatical filter is formulated on features external to

the $\sqrt{\text{Root}}$ but the semantic filter is not as clear. Vocabulary Insertion will add meaning to the grammar in the case of l-morphemes, but this meaning should not interfere with the syntax.

Strict or Grammatical Restrictions on $\sqrt{\text{Roots}}$

If it is accepted that l-morphemes cannot operate freely under all proposed functional heads, then there must be restrictions and we should account for them. The first type of restriction is a grammatical restriction. This is the restriction that absolutely prohibits the insertion of a particular VI into a $\sqrt{\text{Root}}$ node c-commanded by a certain categorizing head.

The Encyclopedia cannot forbid a Vocabulary Item from being inserted in any particular $\sqrt{\text{Root}}$ node. To explain the inability for certain Vocabulary Items to be grammatically inserted in L-nodes dominated by a certain functional head, exclusionary rules must be a part of the grammar. The other way to do this would be to have homophonous forms, one as a representation of the f-morpheme and the other as a VI for a l-morpheme. However, as argued in Chapter 2, this is not desirable. With that being said, VI insertion into a $\sqrt{\text{Root}}$ is guided by rules.

VI Insertion into a $\sqrt{\text{Root}}$ Dominated by Little p_

It is possible for every functional head, n_, v_, a_, p_ etc..., to have association rules which in essence form a list of eligible Vocabulary Items for insertion. Siddiqi (2005: 111) lists example phonological licensing environments which achieve a similar purpose to what needs to be done here. For example Vocabulary Items that are intransitive cannot appear under a [+cause] little v_ head. Siddiqi's environmental licensing conditions are probably what ultimately need to be elaborated on for the overall theory to be able to explain all cases of ungrammatical lexical VI insertion.

However, not as many stipulations are needed to explain P-form insertion into little p_ and thus a simpler approach to VI restriction is taken here.

Functional heads contain features as explained in 3.5, even if their identity is unclear. VIs in *List B* are listed with feature environments. VIs cannot be inserted in a $\sqrt{\text{Root}}$ node that is incompatible. A $\sqrt{\text{Root}}$ node is incompatible if it receives a feature contrary to the particular VI looking to be inserted. $\sqrt{\text{Root}}$ nodes get their features from the functional head that licenses them, their external environment.

In the case of little p_, this functional head has a [+ relational, +case] feature. This is justified by the fact that the primary job of prepositions is to relate two phrases together and to provide case. This is shown by Figure 4-1. As will be explored in Chapter 5, the [+relational] feature may be the best feature to define the little p_ head.

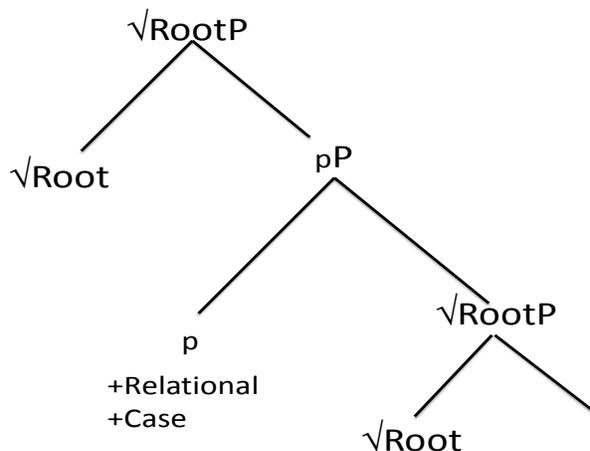


Figure 4-1. Little p_ as relational functor.

Given this [+relational] feature, Vocabulary Items can be relegated. This is seen by the following rule.

P-form Insertion Rule: /in/, /on/, /up/, /off/... /P-forms/ → (√Root: [+,- relational] [+,- case]).⁷ This means that these VI's may be inserted in a √Root with [+relational] [+case] features. However, they are not limited to environments with only these feature and thus can be inserted under little n_, v_, and a_ which have a [-relational] feature. The purpose of the n_, v_, and a_ functional heads is not to show how one phrase connects to another. It should be noted that the presence of the [+case] feature is not necessary for the core meaning of the word to be associated with a relation. This is seen by the evidence given in Chapter 2. If I say that I am *pissed off*, *off* does not grammatically relate two phrases. It just combines with the verb to mean 'angry' in America and 'drunk' in Great Britain. However, the *off* in *piss off* maintains a relational meaning similar to *away from* as the command *piss off* means get away from me. Moreover, a P-form does not have to have a [+relational] feature to keep its core meaning. The word *up* in the expression 'he has ups' does not relate two events. Thus the meaning of the P-form can be similar, despite it appearing in a different location.

If we accept Harley and Noyer (2000), the same type of rule is needed to explain the grammaticality of /sink/ →(√Root:[+,-cause]), which can be found in both transitive and intransitive environments, in comparison to /fall/ →(√Root: [-cause]), which can only be found in intransitive environments (Siddiqi 2005 for an alternate analysis). These environmental licensing rules allow for *The ship sank* and *The ship sank the other ship* but prohibit **John fell Sally*. Environmental licensing rules are by nature both exclusionary and underspecified. They are specified only enough to forbid the insertion of certain forms while ultimately permitting choice. This is different than Vocabulary

⁷ Remember the feature is in the syntax, not List B. P-forms do not need this feature to be inserted and the insertion of P-forms does not add this feature.

Insertion with f-morphemes because even though Vocabulary Items are underspecified for abstract morphemes too, only one form can win and be inserted at any given f-node. This is seen with the cases of true prepositions, where there is no justification for the form to correspond with an l-morpheme.

Insertion of Forms Directly under Little p_

“Distributed Morphology makes crucial use of root-out insertion, that is Vocabulary insertion must affect the verbal or nominal root before it affects any functional head adjoined to the root” (Legate 1999:15): if there is no $\sqrt{\text{Root}}$ directly c-commanded by little p_, then vocabulary insertion occurs like any other f-morpheme. The form specified for the feature(s) under the little p_ gets inserted. This is shown by here with Figure 4-2.

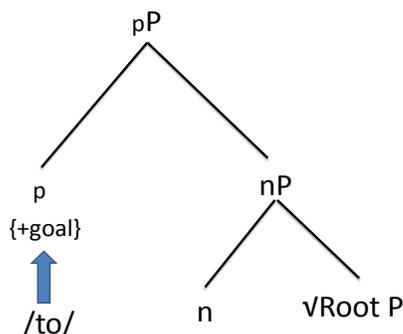


Figure 4-2. VI insertions for f-morphemes.

With the structure given in Figure 4-2, these following rules could dictate the distribution of f-morpheme prepositional forms in English.

- (1) a. [of] \leftrightarrow {+ Genitive}
- b. [at] \leftrightarrow {+Locative} [[a] \leftrightarrow {Locative} _ long, side, top, ...]⁸
- c. [by] \leftrightarrow {+Agentive}

⁸ The insertion of [a] would occur when a $\sqrt{\text{Root}}$ is directly c-commanded by p_, so figure 4-2 is not accurate for this realization of p_.

- d. [from] \leftrightarrow {+Source}
- e. [to] \leftrightarrow {+Goal}
- f. [with] \leftrightarrow {+Associative}
- g. [for] \leftrightarrow {+Benefactive}
- h. [via] \leftrightarrow {+Path, +Source}⁹

With these eight forms, we can account for the forms that represent purely grammatical prepositions in English. In the cases of the other meanings for *by* and *with*, which we see expressed in examples like *bystander* and *withdraw*, we can now say this is homophony. The *by* in *bystander* is not the Agentive *by* but the Locational *by* and the *with* in *withdraw* or *withhold* could be argued to be a fossilization of the old more lexical *with*, which has the meaning 'back,away' (Online Etymological Dictionary). Such radically different meanings suggest homophony as discussed in Chapter 2. If a $\sqrt{\text{Root}}$ directly c-commanded by a p_ functional head, then insertion will be like this.

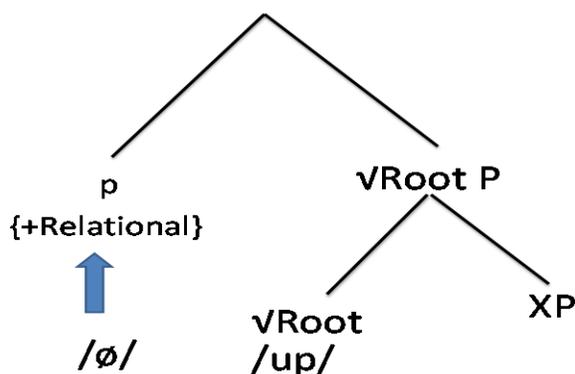


Figure 4-3. VI insertions with $\sqrt{\text{root}}$ filled.

In this case the relational feature(s) are checked by the $\sqrt{\text{Root}}$ filled with *up*.

Insertion of a null \emptyset item could be said to happen in most cases.¹⁰ Moreover, the

⁹ It is uncertain if *via* constitutes an l-morpheme in English. It appears in many Latinate borrowings such as 'deviate' as a root, but its productivity in English and ability to appear under other functional heads has not been established.

insertion of a schwa in the case of l-morphemes such as *long*, *board* and *side* could be said to occur in this relationship when there is a [+locational] feature under p_. Another benefit of having the /ø/ marker represent the head when the $\sqrt{\text{Root}}$ is local is that forms such as *home* can be said to fill this spot. Thus the sentence *I went home* has a /ø/ insertion under little p_ while if we want *home* to be in the DP, little p_ will be realized: *I went to my home*. The inclusion of *home* in the P-form list is possible and gives more reason for allowing little p_ to be realized by a $\sqrt{\text{Root}}$. The bound morpheme ‘*ward*’, which attaches to P-forms and is a possible insertion inside the expanded structure of *P* given by Svenonius (2008), can of course also attach to *home*. *Home* can also be used as a particle: ‘the preacher drove his point home’ vs. ‘the preacher drove home his point.’ The insertion of *home* would thus look like this /home/ \rightarrow ($\sqrt{\text{Root}}$: [+,- Relational] [-Case]). All in all it is an interesting thought given the predictions of this present analysis.

In conclusion the insertion of $\sqrt{\text{Root}}$ s can affect the phonological realization of f-morphemes. Moreover, the presence of a Grammatical Filter explains why some VI insertions at L-nodes violate the grammar and others do not. It does not, however, explain why some insertions are preferred over others. This requires the final component of DM, the Encyclopedia, to perform a kind of semantic check. This creates a second filter, the Semantic Filter.

The Encyclopedia

The Encyclopedia is not a well developed idea in Distributed Morphology. Harley and Noyer mention that “the relationship of the Encyclopedia to the Vocabulary is the topic of much current debate”(1999: 4). Simply the Encyclopedia “associates

¹⁰ DM does not require a null insertion because not every node needs to be filled by a VI.

phonological expressions with meaning” (Harley and Noyer 2000: 2). However, “it remains an open question how the Encyclopedia effects [grammatical well-formedness] on semantic interpretation” (1999: 8). Since DM has done away with lexical semantics, the Encyclopedia has been responsible for associating non-linguistic knowledge and certain meanings with exponents (Harley and Noyer 1999: 2). It is also responsible for storing the idiomatic meaning a morpheme, word, or phrase might have (Harley and Noyer 1999: 2). We might be able to say that the “Encyclopedia [has an] entry for the Root (or Roots) which are involved” in an idiom (Harley and Noyer 1999: 4). Thus every Root must have an entry in the Encyclopedia as “f-morphemes are typically not idioms, but l-morphemes are always idioms” (Harley and Noyer 1999: 4). This association could also have the power to influence the insertion or permanence of certain Vocabulary Items under lexical functional heads. However, according to Siddiqi (2005: 8):

The Encyclopedia plays no part in the construction of a derivation, nor does it serve any role in determining whether the derivation is well formed. Rather, it simply assesses the interpretability of the sentence.

In this way the Encyclopedia allows Chomsky’s classic sentence colorless green thoughts sleep furiously to be possible grammatically and yet senseless according to our knowledge of the world. This is because “a root may even appear in an environment that our real world knowledge is not compatible with” (2005: 21). This seems to agree with Harley and Noyer who also use Chomsky’s sentence to reiterate the known distinction of “grammatical well-formedness” and “pragmatic anomaly” and the ability to make sentences we would never use (2000: 2). As Chapter 3 argued, in the case of P-forms, it is much harder to imagine sentences such as, *I got a bad grade location my test. This sentence does not seem grammatical as the one given by Chomsky is. Also it

is arguably harder to produce. Thus it seems we need the grammatical restriction argued for in the previous section if P-forms are to be viewed as I-morphemes. However, this grammatical restriction cannot predict degrees of grammaticality. There must be some freedom for different forms to appear in the same place.

Semantic Checks on $\sqrt{\text{Roots}}$

A semantic check is something that conceptually happens during/after Vocabulary Insertion. This happens as phonological information gets interpreted by the Encyclopedia. According to Embick and Noyer, “this component, the Encyclopedia, is consulted subsequent to the output of PF/LF, which we abbreviate simply as ‘Interpretation’ (2005: 9). At this point insertion patterns that are uncommon or meaningless could be noticed and in theory reevaluated because the Encyclopedia cannot meaningfully interpret them. In other words what would prevent the Encyclopedia from initiating a redo at the Vocabulary Insertion stage. The information at LF would not change. This view like the grammatical filter of the previous section also goes against the idea that the Vocabulary Insertion of $\sqrt{\text{Roots}}$ is completely free. This is because while all available candidates could fill a L-node slot, insertions are practically screened after the fact. However, an Encyclopedic semantic check does not support the notion that the Vocabulary Insertion of $\sqrt{\text{Roots}}$ is competition free. Any form available via insertion rules can be inserted. Thus many forms can be sensibly inserted in the same place, allowing for competition. There is a choice (Harley and Noyer 1999:5). Thus the examples in (1) are grammatical but (1c) is not normal.

- (1) a. Nine passengers *aboard* flight 987 became ill.
b. Nine passengers *on* flight 987 became ill.
c. *Nine passengers *in* flight 987 became ill.

Many would argue that (1c) is ungrammatical but according to our account so far this is not due to features under little $p_{_}$. The meaning of these three P-forms should be alright with a [+locative] feature. Thus the problem has to do with the something else, the greater context and word associations. A similar context and a different object NP yield a more acceptable reading as seen in (2).

- (2) a. Nine passengers aboard the plane became ill.
b. Nine passenger on the plane became ill.
c. ?Nine passengers in the plane became ill.

Pragmatics might be responsible for making *in* acceptable in certain cases. Also P-forms can be inserted under functional heads where the reading will be senseless.

- (3) a. The blue downs down the orange ups were outed.
b. The blue ups up the orange downs were offed.
c. The blue downs along the orange ups were outed.

If these sentences are parsed correctly, they are grammatical, but they don't mean anything. All in all these examples are meant to show that there is something outside the formal grammar that regulates the interpretation of Vocabulary Items in sentences and renders things meaningful. This way there can be many options for which P-form will be inserted but perhaps only a few will make sense. Thus we do not need a huge list of grammatical features to predict the grammatical insertion of every P-form.

Licensing Restrictions on the VI, not the L-morpheme

Taking the externally motivated restrictions idea further, we can say that licensing restrictions have nothing to do with features in the $\sqrt{\text{Root}}$ or under the categorizing head per se. First we must partition the idea of an I-morpheme. Using Acquaviva's (2008: 11) distinction that "Root-as-node \neq Root-as-exponent \neq Root-as-category-free domain",

we can attribute all licensing restrictions to the process of Vocabulary Insertion. We can say that it is the property of the “L-node” defined as a “node realized by a root” that “allow[s for] non-deterministic Vocabulary insertion” while the exponent or Vocabulary Insertion of the $\sqrt{\text{Root}}$ placed there will result in conceptual restriction. According to Harley and Noyer (2000: 1), “vocabulary items are formally licensed for use” because of encyclopedic principles. The Encyclopedia “gives interpretation to VIs” and this interpretation can take the greater phrase context into account (2000:4). In other words, when the phonology is inserted, the information goes to the Encyclopedia where real world knowledge is stored and meaningful choices can be made. If a phonological string is placed under a little p_ node that has no semantic relation to little p_, the result will be a serious conceptual error, prompting a different string to be placed under the L-node. They use this form of checking to differentiate from awkward sentences to fully ungrammatical. If grammar were purely feature checking and or lists of stipulations, it would be more difficult to say why one occurrence is more ungrammatical than another. However if it is the encyclopedia or real world knowledge that is informing our I-morpheme choice, then the level of ungrammaticality can be better differentiated or looked at as a matter of degree. Thus as Harley and Noyer claim, only a “VI which is compatible with the generated structure may be inserted at the I-node” (2008: 10). The consequences of this are desirable. As Acquaviva (2008: 12) predicts:

[This] allows us to envisage cases where the same Vocabulary item is inserted in both L- and F-nodes. This seems the correct characterization for what are often called 'semi-lexical' categories, which arise when a 'lexical' open-class morpheme has an additional use as a grammatical morpheme.

Therefore this thesis does not claim or need to claim that there are different $\sqrt{\text{Roots}}$ inList A. All that is needed is a single $\sqrt{\text{Root}}$ that can be commanded by all the

different heads. The restriction will come on the realization of that $\sqrt{\text{Root}}$. It could be argued that it is possible for the meaning of most P-forms to conceptually receive more perspectives than non-P-forms. In other words, there is more to the understanding of words such as *house*, *walk*, and *green* than a sole relational understanding. This is not accident as it mirrors what we know about our conceptual abilities. We are able to parse objects and actions into many items while the way we can conceive a relationship between them is more limited. Thus, while the exact content of $\sqrt{\text{Roots}}$ is currently a matter of debate within the theory of DM, this paper only wishes to provide possible justifications for restricting the list of I-morphemes that can possibly be c-commanded by a little $p_{_}$.

Concluding Remarks

The probability of an I-morpheme being represented by a particular VI depends on the functional head that licenses it. This probability is not accident but the result of some sort of organization, witnessed by observable patterns in language. This organization could theoretically be the result of restrictions. This means that lexical VIs are not simply a disorganized mass of phonological strings kept in an abstract list. Rather they can be organized via their licensing environments. A cause for organization in *List B* does not seem to be a negative consequence of this proposal. Forms often get put into groups that get discovered as language specific categories or classes. This is based on the grammatical structure of the language and does not depend on encyclopedic or semantic knowledge per se.

The proposal is that there are at least two types of restrictions placed on the Vocabulary Insertion of $\sqrt{\text{Roots}}$. A grammatical restriction is responsible for eliminating a

particular VI from getting considered under a certain functional head and a Semantic Filter helps decide appropriate via the greater context.

The Grammatical restriction is language specific and explains how P-forms can land under little p_ and other functional heads while other VIs cannot. Moreover, if no $\sqrt{\text{Root}}$ is c-commanded by little p_ then VIs for f-morphemes will compete for insertion. If two P-forms both pass the grammatical filter, then the appropriateness of insertion is left to the Encyclopedia. This creates a kind of Semantic Filter which in theory can evaluate the meaningfulness of Vocabulary Items in a phrase compared to the greater context of the sentence and discourse. This looks to be enough to explain the distribution of all prepositions in English.

CHAPTER 5 P-FORMS AS PARTICLES AND FINAL REMARKS

This chapter is organized accordingly: it begins by proposing that particles are a p_ head in a vP shell, then it talks about the role of the particle in the vP shell and gives an established structural basis for its positioning and movement, after that it argues that the label Particle Phrase can be abandoned in favor of a functional head that has an identifiable feature and it also further discusses the nature of this head, the next section proposes modifications to the established vP structure and particle shift, then the section after explains how movement might be accounted for after these modifications have been made, and the conclusion summarizes the main points of this work and explicates some of the uncertainties remaining.

Accounting for Particles in the System

According to this account of prepositions and particles, particles are an instantiation of a P-form inside a verb phrase, vP, shell. This paper will not get into what types of possible little v_ heads would render the appropriate structure, as there probably is more than one variety. Rather with the knowledge of licensing environments, it will briefly discuss how insertion could work via a generic v_ head dominating a caseless p_ head. This Caseless p_ head will be viewed as a type of relater. This is because this head adds a relational aspect/aktionsart between the verb and its object. Caseless p_ will be the head proposed to be responsible for categorizing a P-form inside a vP shell. This analysis does not intend to trump any previously argued for structures that could host a P-form in the vP shell. Rather this head is merely necessary to represent a previously proposed feature, unify the present analysis, and suggest ways that modifications to the existing structure may be helpful.

P-forms in the vP Shell

When P-forms get inserted into a vP shell, they direct or relate the action of the verb to an endpoint. Observe Example (1a).

(1) a. Mary drank the water down.

In this sentence *down* relates the object “water” with the action “drinking” by providing a result to the action (Embick 2004 for more). Compare this with the sentence in (2).

(2) a. Mary drank up the water. ‘Mary drank the water gone.’

As in (1a), the particle in (2a) also provides a result but without a literal direction. In this case *up*, which is often described as a perfective particle (Lindstromberg 1998 specifically and Brinton 1985 for more generally on this), gives us the interpretation ‘the water is no more’. The drinking process is finished. The endpoint results in the water being inaccessible. Even though in this case *up* does not literally mean the water had to travel from a low to high place to reach a new location, it is hard to say *up* has lost its core meaning in this context. Conceptually, *up* makes sense as the direction to a location that is out of reach. Things that move up get out of reach. In other words one might say, ‘I have to leave the decision up to you, because I am not capable of making it.’ Likewise, the water is now out of reach. Thus the action ‘drinking’ is related to the result of the object of the action.

Up does not have to have this role though as the sentence *She drank the water up from the stream* does not emphasize that the water is no more but rather shows the direction the water from which the water entered the drinkers body. What is similar is that the particle relates the object of the verb to some result or direction. Moreover, while we can accept that there may be different types of particles, it seems evident from the previous chapters that they operate similarly structurally. If we accept the Extended

Verb Phrase Hypothesis, EVPH, (Nicol 2002), then before movement the vP plus particle structure might look like Figure 5-1, which is based on Harley's reasoning (2006) in comparison to den Dikken's (1995) analysis of particle structure.

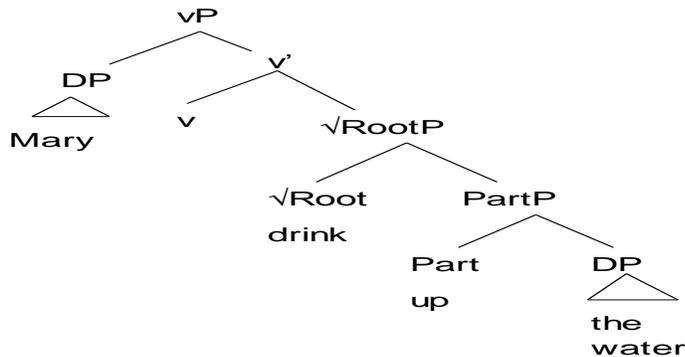


Figure 5-1. Particle verb base structure.

The hierarchical structure in Figure 5-1 is based on the tree Harley gives in (2006:10). Moreover, Harley includes a focus functional head. In Figure 5-1 PartP stands for Particle Phrase and Part stands for the particle head. The I-morpheme *drink* will need to move to v_ to get categorized as the categorization assumption of Embick and Noyer (2005) demands. Harley has a Focus Phrase above the Root Phrase and this is where Harley (2006) has the DP Object move to get focus.

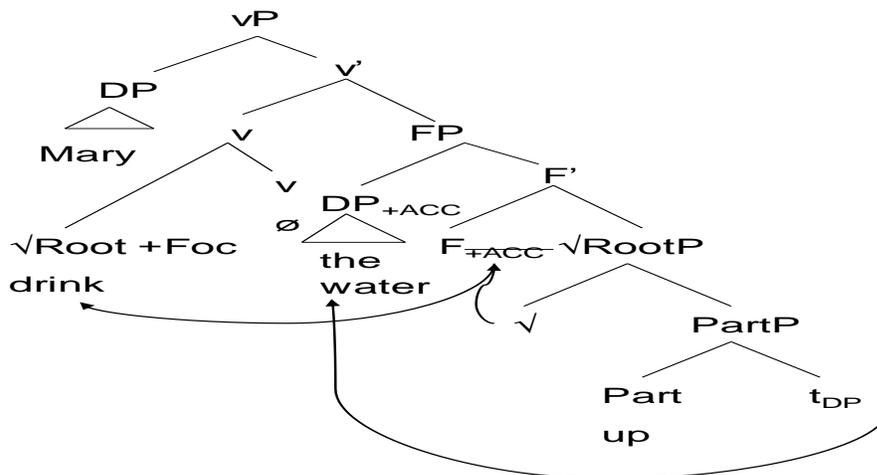


Figure 5-2. Particle appearing after verbal object.

In Figure 5-2 the $\sqrt{\text{Root}}$ *drink* moves through F, picks up the features there, and then moves to the sister position of v° . The DP then moves to Spec FP to check accusative case. In this way we can derive the surface order *Mary drank the water up*. In cases where *up* precedes the Object DP, Harley (2006) has the Particle incorporate with the $\sqrt{\text{Root}}$ *drink* and then move. This is seen with Figure 5-3 where we see *up* merge with *drink* before moving to get focus. The motivation for this movement is all based upon feature checking to accord with minimal syntax and the realization of strong features. This same motivation will be maintained but this paper does not intend to support or deny this motivation for movement.

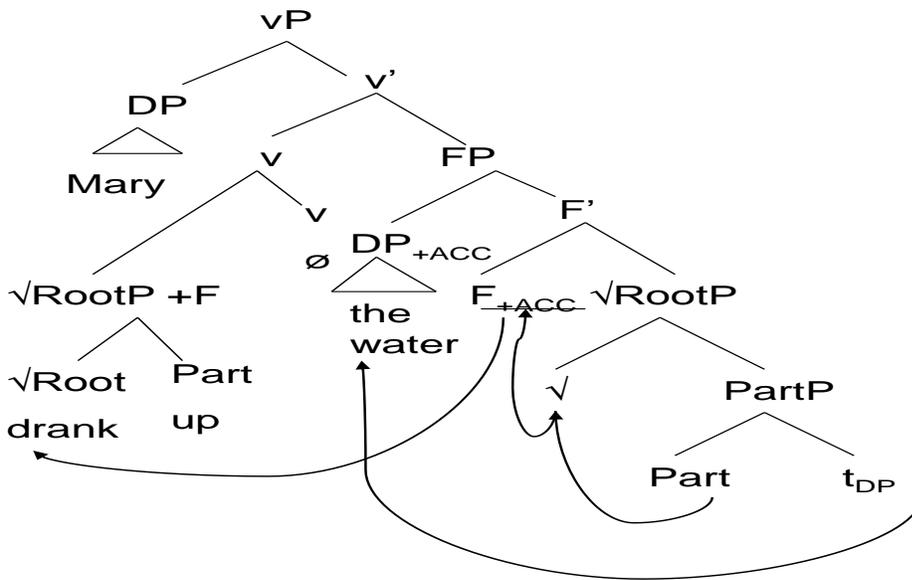


Figure 5-3. Particle before the DP object.

The structure of Figure 5-3 then gives you the surface order *Mary drank up the water*. It should be noted that tense is not accounted for in this model. Thus after the Particle incorporates with the head of the $\sqrt{\text{Root}}$ phrase above, it passes through F° then moves to be categorized by little v . This paper does not attend to argue for or against the

types of movement or the motivation for them. Rather this structure gives us an established place to insert the findings of this thesis.

Replacing the Particle Phrase:

As Harley is not concerned with the relationship between particles and prepositions, the existence of the Particle Phrase can be thought of as a convenient label. There is no reason for it to exist other than the fact that English has things we like to call particles. There is no proposed feature responsible for the creation of a particle head. This paper will call the structure responsible for the particles as a relational little p_* or a Caseless little p_* . This head is created by a [+ relational] feature. This feature, which represents several varieties of direction and aspect, helps explain the connection between the meaning of the P-form, the verb and object, and the result of the verb and object. The relational feature is generic for the types of relationships the particle and verb can have, Aspectual or Aktionsart (Brinton 1985 for arguments between the two). The difference between this head and the p_* head that creates prepositions is that this head is not a case assigner. The same rules that prohibited [-relational] forms from being categorized by little p_* would naturally apply here as well. Furthermore, it should be explicated that it is was the presence of [+case] features that allowed for the insertion of the f-morphemes on Table 2-2 in Chapter 2, those forms that do not get used as particles. Moreover, this relational p_* head could be called something else, but it is not a prepositional head and the term Particle head tells us nothing of about the function of the form inserted under it.

Changes to the Base Structure:

Figure 5-4 specifies where particle(s) can be inserted to better account for the data presented in the previous chapters. In other words, it posits a feature as being responsible for insertion.

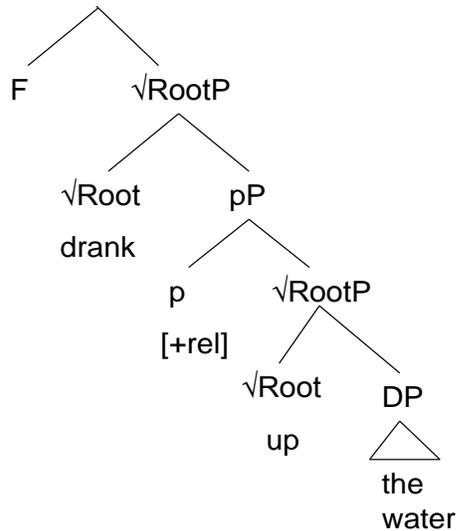


Figure 5-4. The base structure for vP Shells with a relational p_ head selecting a $\sqrt{\text{root}}$.

This structure adds a pP as a replacement to the Particle Phrase. This structure treats particles as a VI being inserted into a $\sqrt{\text{Root}}$ node c-commanded by a [+relational] feature. Thus, in this way Particle insertion complies with this paper's main proposal. This is a good result because we can have two $\sqrt{\text{Root}}$ heads incorporating after movement instead of a $\sqrt{\text{Root}}$ and an f-morpheme, as happens in Harley's model. Moreover, if you have a compound particle construction, one does not need to conjoin two functional heads, as you would if you just had a Particle Phrase to work with. It does not seem common to compound the phonological representation of functional heads, determiners, number, tense etc. On the other hand, if the particle phrase is compounded then we would expect something like *Mary turned on the water and off because both particle heads would not have to move and incorporate with the $\sqrt{\text{Root}}$

that gets categorized as a verb under the premise that this movement is optional.

Another analysis would be to say that the conjunction occurs higher and the most of the second part is ellipsed.

(1) a. Mary turned the lights on and (Mary turned the lights) off.

The first problems with (1a) is that most of the time ellipsis occurs with complete constituents and *Mary turned the lights* is not in this case. The second is that *on and off* do seem to form a constituent in the sense that *John turned the lights on and off and the sprinklers too*. He turned them both on and off.

Movement

In order for the tree in Figure 5-4 to work, the movement proposed by Harley can be modified slightly for what seems to be better results. The first stages of movement under the proposed model is shown in Figure 5-5.

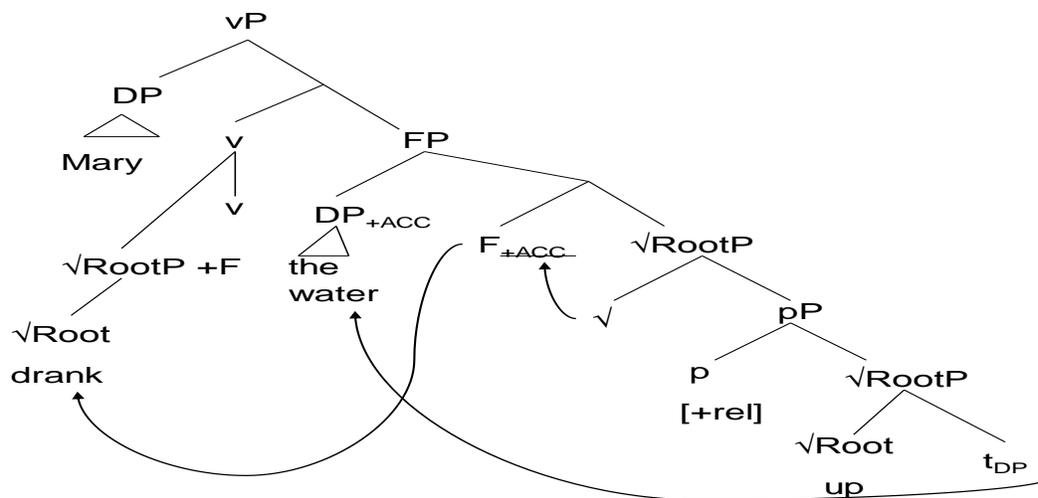


Figure 5-5. First movements.

Starting from the bottom up with head movement happening first, the head of the $\sqrt{\text{Root}}$ phrase above the pP moves through F° and to the complement position of v° just as it did in Harley's model. Next, the DP object moves to check accusative case. This

will get the surface structure *Mary drank the water up*. *Drink* get categorized as a verb and *up* by relational little *p*_. Now if the surface structure for *Mary drank up the water* is desired, then a second Remnant movement is proposed.

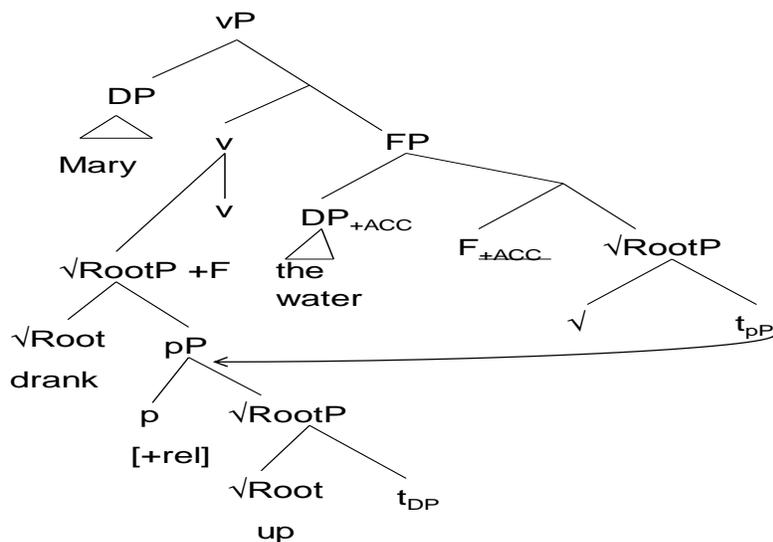


Figure 5-6. Remnant movement.

In Figure 5-6, instead of having the particle incorporate with $\sqrt{\text{drink}}$ and then move through F° to the complement of v° to get categorized, the **pP** waits until its **DP** object moves out and then moves to the complement of $\sqrt{\text{drink}}$. Thus head movement happens first, $\sqrt{\text{drink}}$ to v° ; then phrase movement, the object **DP** to Spec F° and then **pP** to the complement of $\sqrt{\text{drink}}$. This allows the verbal $\sqrt{\text{Root}}$ to later obtain tense without it appearing on the P-form, which would be ungrammatical **drink upped*. The verb particle construction does get categorized as a compound verb. All in all the structure presented here allows for the integration of the analysis of Chapter 2.

Final Remarks

The purpose of this paper is to highlight an old problem within the literature of English grammar, the distinction between Prepositions and Particles and their greater categorization. It also pointed out that many phonological forms responsible for

representing both can appear in non-functional places. It argued against homonymy, as this divorces the clear meaning relationship between up as a noun, verb, adjective, preposition and particle. To solve these problems it shows that the architecture of Distributed Morphology is suited to elegantly account for the different syntactic behavior of words such as up. We can say it is the same form with the same meaning being inserted under two different functional heads, or in two different syntactic arrangements. However, the fact that up can also be used in Nominal or Verbal frame posed a problem for DM as it would other theories. Since Distributed Morphology only has two classes of morphemes, there had to be a way to get Vocabulary Insertions of the same form in both lexical and functional places if a homonymous explanation is rejected. To do this a little p_ functional head was proposed to exist with the base features [+case] and [+relational]. This corresponded with instantiations of prepositions. This head was proposed to be able to categorize $\sqrt{\text{Roots}}$, so forms like up could be classified as Vocabulary Items that are inserted under L-nodes. If the head did not categorize a $\sqrt{\text{Root}}$, then the features left unchecked would prompt the insertion of one of the eight of the following forms: at, by, for, from, of, to, via, and with. These forms are not deemed to be I-morphemes because they do not appear in prepositional slots and they do not behave like I-morphemes. Once the list of P-forms was refined and classified as a type of I-morpheme, another problem arose. How do we keep other I-morphemes from being categorized by little p_? To prevent unwanted Vocabulary Insertion at little p_, two filters were proposed, a grammatical filter and a semantic filter. Together they are able to explain different degrees of wellformedness and prevent unwanted forms from entering under a little p_ head. The main proposal of this work is not the actual

existence of these two filters, but rather that P-forms are viewed as I-morphemes. If insertion can be controlled in a way deemed more friendly to the main spirit of DM, then by all means it should be developed and clarified. Furthermore, we can place a caseless p_0 head in the vP shell. Prepositions and Particles can be seen as the realization of the same basic functional head containing either [+,-case] and different possible relational features. This head is responsible for the insertions that surface as particles in English. With all of this in place, the preposition/particle category can be better understood and so can their behavior. Further research should focus on the types of relational features present under little p_0 in the verbal domain and how to more elegantly control for insertion restrictions within the theory of DM.

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BIOGRAPHICAL SKETCH

Being from Melbourne Florida, I always preferred to be outside. Woods, palmetto bushes, canals, lakes, the Indian River and the sea, school was quite an inconvenience compared to these. I can remember setting fire to my fifth grade English book.

It is dreamlike, remembering just how one really gets from A to B. I ended up majoring in English and minoring in Psychology to the surprise of a few. Moreover, after I graduated from the University of North Florida in 2005, I traveled again to Europe. Perhaps some things had changed, but I still needed to explore, to understand and to render, even if it be just a fraction of what lies upon the surface. Upon returning, I worked both in a home improvement store and as an educator in the Jacksonville Public schools.

Manual labor is not all that bad, but it can be a powerful motivator. After quitting the retail job, I worked as tutor in a learning center based in Fruit Cove outside of Jacksonville. There I got to work with all sorts of kids and with beginning college students. With kids and disabilities there are many challenges, but overall it was a great experience and my boss was wonderful. However, I knew the job was transient.

I had taken an introductory class in Linguistics my senior year of college and continued to be interested in it, and I had read some books about teaching English abroad. However, I felt unqualified and uncertain. Thus when I received my acceptance letter to UF, it seemed like the next phase of my life had been given clear direction. There is a joy to knowing you have a purpose and that that purpose is mildly fugacious. Likewise as this work comes to fruition, a new direction and phase will hopefully begin. Thank you for taking the time to consider these small things.