

Chapter 1: Introduction

0 Introduction

Prepositions represent an important and frequently used category in English. In a corpus study of one million English words, one in ten were found to be prepositions (Fang 2000). Despite their frequent occurrence in English, there is no unified account of this category: it remains a contradictory and problematic category. Two fundamental tensions underlie the difficulties with this category.

The first is a problem that was raised in the literature of the 1970s, when prepositions were argued to be one of the four major lexical categories, along with nouns, verbs and adjectives. Chomsky (1970) presented the “binary features” approach to define the core features of the four main lexical categories that has been generally accepted in the literature (1).

(1)	[+N, -V]	Noun
	[-N, +V]	Verb
	[+N, +V]	Adjective
	[-N, -V]	Preposition

Jackendoff (1973) further argued that prepositions should be seen as a lexical category on grounds of their parallels with verbs in selecting for specific complement types, acting as constituents with their objects, and so on. Since this time, prepositions as a class have generally been accepted as a major lexical category with similarities to and differences from the other major categories.¹ However, the exact membership of the category has not been well-established. In the 1970s there were two views of what

¹ Baker (2003) has recently rejected this view, claiming that prepositions are not a lexical category.

should be included in the category. In the first, Jackendoff (1973) and Emonds (1985) claimed that prepositional adverbs (*put down the cup*), particles (*look up the number*), prepositions (*run to the store*), represent a single, uniform class, based on the similarities of these three elements, especially the high level of overlap in semantic content and phonological form of these elements. In the second view, Bolinger (1971) and Fraser (1976), emphasized the underlying syntactic differences among these elements, as seen in a variety of very clear distributional patterns, and argued that prepositional adverbs and particles should be considered as separate from prepositions. Despite the interest at the time, the question of whether prepositional adverbs and particles constitute prepositions or not remains an open one in the literature today.

The second problem concerns the status of prepositions as functional or lexical elements. Since the 1980s, one line of syntactic inquiry has focused on the differences between functional and lexical elements. The analysis of Infl(ection) (Stowell 1981, Pesetsky 1982, Huang 1982, Chomsky 1986) divided the Verb Phrase into its lexical and functional components, and the Noun Phrase was similarly reanalyzed in terms of its lexical and functional parts (Abney 1987). Prepositions, however, do not fit neatly in either the lexical or the functional designation. If they are a (major) lexical category, then they should constitute an open class, but they don't: they are a closed class. Also, as a lexical category, they should contribute to the descriptive content of the phrase, but prepositions like *of* in phrases like *description of the city* do not appear to contribute meaning, but are inserted simply for Case assignment.

In recent syntactic research, several attempts have been made to account for the inconsistencies found in the category of prepositions (Tremblay 1996, Cadiot 1997, Rauh 1993, Rooryck 1996, Leonard 1997). While these accounts differ in their details, they all point to a theoretical distinction between prepositions that are lexical in nature and those that are syntactic, or functional. However, none of these approaches takes into account both of the problems with the category: they focus solely on the second.

In this dissertation, it is argued that a more fine-grained approach to the notion of category can resolve most, if not all, of the contradictions manifest in prepositions. Two observations drawn from the literature provide the springboard. First, a growing body of evidence points to a middle ground between lexical and functional categories in a number of areas (for a variety of approaches, see the collection of articles in Corver and van Riemsdijk 2001). Second, work by Grimshaw (1991) and van Riemsdijk (1991, 1998) suggests that Chomsky's (1970) categorial features can be applied more broadly than was originally intended, so that, for example, [+N, -V] represents both the lexical Noun and the functional Determiner, and so on. Both Grimshaw and van Riemsdijk posit a feature [\pm F] ([+F] applies to a functional node and [-F] applies to a lexical node) that can be used to distinguish between the lexical and functional projections: for example, Nouns and Verbs are [-F] while Determiners and Tense, Aspect, Agreement are [+F].² It is claimed that the distinction between lexical and functional features should be distinguished from one another more explicitly. While most literature in this

area (including Grimshaw and van Riemsdijk's [$\pm F$]) defines 'lexical' as in opposition to 'functional', and vice versa, a more specific definition is offered here. Lexical features are tied to referential content, and functional features are tied to Case assignment. Using a binary features approach, this leads to four possible designations, as seen in (2), that can be used to define each lexical domain.

- (2) [+Lexical, +Functional]
 [+Lexical, -Functional]
 [-Lexical, +Functional]
 [-Lexical, -Functional]

Thus two levels of categories are identified: the first, larger category is the one identified by Chomsky's binary features [$\pm N$, $\pm V$] and is referred to as a 'domain' (the nominal domain, the verbal domain, and so on) to distinguish it from the second type of category; the second, more narrow categories are those identified as [\pm Lexical, \pm Functional] that define the component parts of each larger category. Thus the nominal domain is comprised of categories like Noun and Determiner, and the verbal domain is comprised of categories like Verb, Tense, and Aspect. Further research may shed light on the remaining categories that comprise each of these domains. The focus of this dissertation is the prepositional domain.

In the prepositional domain, the four categories are argued to be filled by prepositional adverbs, particles, and two types of prepositions. Prepositional adverbs in phrases like *put it down* and *pull it up* represent the truly lexical elements and have the

² They also both posit (drawing on Muysken 1983) features that can account for the levels of projection: the phrasal level, the bar level, and the head; these are unimportant to the current discussion.

specification [+Lexical, -Functional]; they contribute to the referential meaning of the phrase but can't license Case. Particles in verb-particle constructions, like *look it up* and *throw up* 'vomit' do not as individual words contribute referentially to the phrase, and cannot assign Case; they are assigned the features [-Lexical, -Functional]. Semi-lexical prepositions, which one traditionally thinks of as prepositions (as in *sit in the office*, *hit him on the head*) contribute both referential meaning and assign Case to their complements; their designation is [+Lexical, +Functional]. Lastly, functional prepositions are those like *of* in *translation of the text* which contribute no referential meaning and assign Case; their features are [-Lexical, +Functional].

While the first half of the dissertation establishes the features [\pm Lexical] and [\pm Functional] and their application to the prepositional domain, the second half provides additional support of this analysis from other fields. There is already evidence from language acquisition indicating that there are differences in how children acquire particles and adverbs (Sawyer 1999), particles and prepositions (Wegner and Rice 1988), and prepositions, particles and adverbs (Littlefield 2003). Evidence can also be found in the field of psycholinguistics that there are differences between semi-lexical and functional prepositions in aphasia (Friederici 1982) and in reaction times (Friederici 1983). Some cross-linguistic evidence may also be found in languages like Welsh, where some prepositions can be inflected for agreement features, while others cannot (Rouveret 1991). However, while this evidence broadly supports the distinctions between categories, none of it makes the four-way division argued for here.

Because it is well documented that children acquire language in stages (Brown 1973, deVilliers and deVilliers 1973), and even more importantly, that they correctly produce lexical elements before functional ones (Lebeaux 1988, Radford 1990, Platzack 1992), first language acquisition is an ideal testing ground for the proposal that the prepositional domain is comprised of four categories, each with different lexical and functional specifications.

More specifically, given what we know about the acquisition of functional and lexical elements, it is argued that specific predictions can be made for the order of acquisition of prepositions, based on the functional and lexical specifications for each category. In brief, we expect purely lexical elements (those having the features [+Lexical, –Functional]) to be acquired first, and purely functional elements (those having the features [–Lexical, +Functional]) to be acquired last. Particles and semi-lexical prepositions should be acquired sometime after the lexical elements and before the functional elements, but no prediction is made concerning the specific ordering of particles and semi-lexical prepositions. This is left as an empirical question to be answered by analysis of the acquisition data.

In order to test the predictions of this approach and to support the analysis of the prepositional domain offered here, a longitudinal study of five children drawn from the CHILDES database (MacWhinney and Snow 1985, 1990) was conducted. All utterances containing prepositional contexts, whether correct or incorrect, were coded and analyzed. Using the criterion of 90% accuracy in all obligatory contexts, it was

found that all five children showed identical patterns of acquisition. Most importantly, it was found that prepositional adverbs were acquired first and functional prepositions were acquired last; this clearly supports the view of prepositions argued for earlier. Further, it was found that particles were acquired before semi-lexical prepositions, leading to the conclusion that the functional specification outranks the lexical specification in determining the order of acquisition.

The approach presented in this dissertation not only resolves two of the broadest, far-reaching problems with the class of words known as prepositions, but it should have wide-spread application to other syntactic domains (the verbal domain, the nominal domain, the adjectival domain). The conclusion that syntactic domains contain four discrete categories having different combinations of functional and lexical information provides a much more explicit understanding of what ‘lexical’ and ‘functional’ refer to, and allows for a much more fine-grained approach to categories that can account for the growing body of elements that are seen as having both lexical and functional qualities (the so-called semi-lexical elements). In simultaneously emphasizing the similarities and differences of syntactic categories, we can better capture the characteristics that define the domain and the characteristics that define each of its component categories.

1 Organization

The two fundamental problems with defining prepositions as a syntactic category are more fully addressed in Chapter 2; the notion of semi-lexical category is

presented in Chapter 3, along with the basic proposal for lexical and functional features in syntactic domains. In Chapter 4, we focus on the application of features to the prepositional domain, and each prepositional element is considered individually. A review of the supporting evidence from language acquisition, psycholinguistics, and Welsh is given in Chapter 5, along with the predictions of the patterns that should be found in acquisition, if the view of prepositions adopted here is correct. In Chapter 6 the methodology for the acquisition study is laid out, and in Chapter 7 the results of the study are presented and discussed. I conclude in Chapter 8, with a brief review of the broad claims of the dissertation, and a discussion of suggestions for future research.

2 A note on terminology

2.1 (Prepositional) adverbs

Throughout the dissertation, the term ‘adverb’ will be used in a very specific sense to refer only to prepositional adverbs, and not to ‘true’ adverbs like *interestingly*, *quickly*, and *slowly*. Thus the term ‘adverb’ used in this dissertation only refers to the set of words that is largely homophonous with prepositions and has a different syntactic distribution than true adverbs. Adverbs, as discussed here, can occur either to the right or to the left of the object of a transitive verb (3a), while true adverbs cannot (3b) (Bolinger 1971).

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|-----|---|---|---|
| (3) | a | She held (down) the chess piece (down).
He folded (over) the corner (over). | |
| | b | She held (*carefully) the chess piece (carefully).
He folded (*deliberately) the corner (deliberately).
We’ll watch (*tomorrow) the movie (tomorrow). | manner adverb
manner adverb
time adverb |

Bring (*here) the toy (here).	place adverb
Don't hang (*askew) the picture (askew).	stance adverb

In short, (prepositional) adverbs are inside the verb phrase, while true adverbs are not. For the remainder of the dissertation, the term 'adverb' will be used as an abbreviation for 'prepositional adverb', and in the few instances where a discussion of traditional adverbs becomes necessary, the term 'true adverb' will be used.

2.2 'Lexical'

The term 'lexical' is a second term that will be used with a very specific meaning throughout the dissertation. It is *not* used in its general sense to refer to something related to the lexicon (at the level of the word); 'lexical' is used in this dissertation in the spirit following from the distinction between lexical and functional categories (noun, verb, adjectives and prepositions versus tense, aspect, number, gender, etc.). In examining the distinction between lexical and functional elements, it will be argued that the lexical content refers to the type of semantic content that is contributed by the element in question. Thus the term 'lexical' will be used to mean 'semantic content,' not to the status of an element as a word.