Chapter 2: The problems with prepositions

0 Introduction

Prepositions are a problematic category for two fundamental reasons. The first is a problem central to the definition of the category itself: what are the members of the category? The second is central to defining the syntactic nature of the category: how do they fit into the categorization of syntactic categories as lexical or functional? Determining the answers to these two questions is essential if we are to understand the nature of prepositions. And by answering these questions, we increase our understanding of the nature of syntactic categories as well.

At the heart of the category Preposition are the transitive prepositions such as in, on, under, to and with that are traditionally taken to be prototypical of the category; these form the core of any definition of the category. But at the edges of the category are elements such as particles (which together with their verbs are also known as phrasal verbs) and adverbs (or prepositional adverbs) that seem inherently related to prepositions and at the same time show striking differences in their syntactic distribution. Are these elements prepositions, or do they represent different, non-prepositional categories?

I will open the discussion with the view that these three types of words—prepositions, adverbs and particles—are fundamentally different, as seen in the distributional differences that are exhibited by these three types of elements. With an overview of the types of syntactic patterns that are most widely discussed in the literature on particles, adverbs and prepositions (Fraser 1965, 1971; also discussed in
Bolinger 1971, Baker 1995, Sawyer 1999), I close Section 1 concluding that there is strong evidence for differentiating these three elements.

However, the story does not end with the conclusion that there is something fundamentally different in each of these elements. Turning to the arguments in favor of viewing these elements as a single category (Jackendoff 1973, Emonds 1985), we see in Section 2 that there is reason to take particles and adverbs as members of the same category as prepositions. Section 3 investigates the claims of category overlap made in the Section 2 more thoroughly; it is concluded that it is unlikely that these three elements comprise one single, monolithic category. The answer must be more complex than selecting between either a single category or several separate categories. I return to this problem in Chapter 3, and offer a possible solution.

The second fundamental problem with the category of preposition is a more modern problem, which deals with the classification of syntactic categories as lexical or functional: where do prepositions fit in this taxonomy? This problem is introduced in Section 4, where we see that prepositions seem to be lexical in some ways and functional in others. These observations are, of course, not new, and there have been a handful of attempts to account for these apparent conflicts. Despite the differences in each approach to the problem, one underlying theme unites each of these efforts: they all share the view that prepositions represent some sort of hybrid category where some elements are lexical and some are functional. Section 5 outlines these approaches, and shows that despite the unifying theme of a hybrid view, none of these proposals adequately resolves both of the fundamental issues at hand. In Section 6, I conclude that
prepositions must represent some type of hybrid category, but that the true nature of the category has remained elusive, leaving the window open for a new approach to the problem in Chapter 3.

1 Multiple categories: differences between prepositions, adverbs, and particles

While adverbs and particles are often grouped together in discussions about prepositions, a distinction between them must be made. In the following section, I briefly outline several of the key tests to illustrate the point. The nature of these tests will be discussed fully in Chapter 4, where the framework suggested in Chapter 3 is applied to prepositions.

1.1 Prepositions versus adverbs and particles

The tests that can be used to distinguish adverbs and particles from prepositions (Fraser 1965, 1976; discussed also in Bolinger 1971, Baker 1995, Sawyer 1999) emphasize the close relationship between the preposition and its object, a relationship that is lacking with adverbs and particles. DP objects can occur on either side of particles (1a) and adverbs (1b), but must follow prepositions (1c). As Bolinger (1971) points out, this placement test also serves to distinguish all ‘true’ adverbs from the prepositionally-related adverbs that we are focusing on here; as seen in (1d), the true adverb must occur to the right of the object, and cannot occur in the preposed position.

(1)  a  Fill (up) the diaper pail (up).                        particle
     b  Pick (up) my box (up).                               adverb
     c  Walk up the hill (*up).                             preposition
     d  Plant (*carefully) the seeds (carefully).           true adverb
       Watch (*tomorrow) the movie (tomorrow).             true adverb
       Bring (*here) John (here).                          true adverb
       Hang (*askew) the picture (askew).                  true adverb
In structures where an object pronoun is used, the pronoun must be placed
before the adverb or particle, while the preposition must be in a pre-posed position (2).

(2)  
(a) He ate (*up) it (up).  
(b) I'm peeling (*off) it (off).  
(c) I stepped (over) it (*over).

Also, as seen in (3), adverbial phrases may separate the verb from the
prepositional phrase, while the verb and adverb or particle cannot be separated.

(3)  
(a) *I’ll pick quickly out the shoes.  
(b) *She took quickly off her bandaid.  
(c) She jumped quickly off the chair.

Prepositional phrases can be fronted, while particle and adverb phrases cannot,
as in (4).

(4)  
(a) *Up the diaper pail she filled.  
(b) *Up my box I picked.  
(c) Up the hill she walked.

Gapping can provide additional support for the fact that prepositions form a
constituent with their object (5c), while particles (5a) and adverbs (5b) don’t (Fraser

(5)  
(a) *He looked up the number, and Tim, up the address.  
(b) *Sue pulled up her sleeve, and Sam, up his pant leg.  
(c) Bob ran up the North side, and Bill, up the South side.

It must be acknowledged that gapped structures are somewhat marginal in prepositional
structures, as it is generally awkward. But the key issue is that the adverb and particle
constructions are clearly worse\(^1\). Also note that for this test to work at all, the prepositional element must remain in the pre-object position; when the prepositional element follows the object, the grammaticality of the adverb construction shifts (and is taken to be one measure of adverb or particle status, as will be discussed later).

With regard to stress, Fraser states that “the stress given the preposition is often very weak, if not completely reduced” (1976: 2), given a normal discourse setting (i.e. not one where contrastive stress is used). His examples are reproduced below: the prepositional phrase is allowed weak stress (6a), but the particle is not (6b).

\begin{align*}
(6) & \quad \text{a} \quad \text{She ran off [оф] the stage.} \\
& \quad \text{b} \quad \text{She ran off [*оф] the pamphlets.}
\end{align*}

However, this test is not easily applied; with a number of prepositional elements (\textit{down, near, around}, etc.), the possibility of having reduced stress seems remote. As summed up by Bolinger: “It is true that prepositions, by and large, do not normally carry the accent….But some prepositions are weightier than others” (1971: 14).

These distributional patterns underscore the differences between prepositions on the one hand and adverbs and particles on the other.

\subsection*{1.2 Adverbs versus particles}

The differences between adverbs and particles are more difficult to pinpoint. Much of the literature on particles doesn’t distinguish between adverbs and particles,

\footnote{1 The relative level of acceptability is key. As Bolinger (1971) states: “When I declare $A$ to be acceptable and $B$ not, I can usually be satisfied if [the reader] finds $A$ unacceptable but $B$ more so. We differ then in the precise location of the boundary, but not in its relationship to the whole” (forward, xv).}
and Sawyer (1999) argues that this lack of distinction has led to the wide variety of proposals for accounting for particles structures that we see in the literature. She further claims that if these two elements are differentiated, then the analysis of the elements falls into line more easily.

Fraser’s (1965, 1976) study of particles and adverbs examines four distributional differences: action nominalizations, gapped sentences, modification by degree adverbials, and contrastive stress. In constructions containing adverbs, the adverb can occur on either side of the object-containing of-phrase (7a); the particle cannot (7b).

(7) a Her pulling (up) of her sleeve (up) was unnecessary. adverb
     b His looking (up) of the number (*up) was unnecessary. particle

In gapped constructions, adverbs act as a phrasal unit, and can be used as a constituent in a gapped structure (8a); particles cannot (8b).

(8) a Sue pulled her sleeve up, and Sam, his pant leg up. adverb
     b *He looked the number up, and Tim, the address up. particle

Adverbs are grammatical when modified by degree adverbials (9a), particles are not (9b).

(9) a Sue pulled her sleeve only part of the way/all the way up. adverb
     b *Tom looked the fact only part of the way/all the way up. particle

Stress can be used to contrast between adverbs (10a), but not particles (10b).

(10) a Sue pulled her socks UP, not DOWN. adverb
     b *Tom looked the information UP, not OVER. particle

Bolinger (1971), drawing on Fairclough (pages 74-45), points out that this test is most effective when used with adverbs showing polarity: up and down, on and off, etc.

Fraser (1976) also notes that three of these four distributional patterns will be found with intransitive structures; the exception is the action nominalization, where, of course,
testing the ordering of the particle or adverb with regard to the object is impossible. The following examples illustrate differences in gapped structures (11), constructions with degree adverbials (12), and contrastive stress (13).

(11)  a  The boy looked up and the girl, down.  adverb
    b  *The varnish coat wore down, and the undercoat away.  particle

(12)  a  The man climbed all the way up.  adverb
    b  *We cracked all the way up when she told us the joke.  particle

(13)  a  He jumped UP, not DOWN.  adverb
    b  *I told her to drop OUT, not IN.  particle

Fraser adds that true adverbs can precede adverbs (14a), but not particles (14b) in intransitive constructions. Bolinger (1971) also cites this as a clear test. Note that the separation of the adverb (and particle) from the verb by an adverbial modifier in transitive structures is not possible, as seen above in (3). Also note that the modifier can be used grammatically if the particles are kept adjacent to the verb (14c).

(14)  a  The baby fell softly down.  
      The cadets marched briskly in.  
      The groundhog moved slowly away.

    b  *The baby threw violently up.  
      *The cadets fell briskly in.  
      *The boy grew quickly up.

    c  The baby threw up violently.  
      The cadets fell in briskly.  
      The boy grew up quickly.

Bolinger (1971) adds that in intransitive structures, adverbs can be fronted (15a), while particles can’t (15b).
(15) a Down we sat.
Away the little bird flew.
Out they went.

b *Down she broke.
*Up he gave.
*On he caught.

The common thread in these tests is that adverbs act independently of the verb, while particles don’t.

The distributional patterns just reviewed support two main points. First, that there is a syntactic difference between particles and adverbs on the one hand and prepositions on the other, and second, that particles and adverbs must also be distinguished from each other.

2 A single category: particles and adverbs are prepositions

While the evidence for dividing prepositions, particles and adverbs into three different categories seems strong, there is an alternative view, which argues that they should nevertheless be taken as a single category. Jackendoff’s (1973) seminal work arguing for the status of prepositions as a major lexical category established the main lines of argument for a single category of preposition, which includes those traditionally defined prepositions as well as particles and possibly subordinating conjunctions as well. Emonds (1985) builds on Jackendoff’s work, and draws the same conclusion: a single category of preposition is warranted. In the following subsections the core arguments of this position are outlined.
2.1 Overlap with particles and prepositions

One of the central arguments found in both Jackendoff (1973) and Emonds (1985) in favor of collapsing particles, adverbs and prepositions into a single category is the observation that there is a high degree of overlap that seems to exist between these categories. Generally, this overlap is observed at three levels: the phonological level (they are the same words), the semantic level (they mean similar things), and the syntactic level (they show similar syntactic behavior in some regards).

The fact that particles and adverbs are phonologically identical to transitive prepositions is taken as an indicator that they must belong to the same category. Jackendoff explains it this way: “By treating particles as a type of preposition, we can claim that particles are related to the corresponding prepositions in much the same way that intransitive verbs such as eat, drink and smoke are related to their transitive counterparts” (1973: 346). [Note that both Jackendoff and Emonds use the terms ‘adverb’ and ‘particle’ interchangeably in their writing, and no clear distinction seems to be drawn between the two.]

Moreover, prepositions, particles and adverbs that share a phonological form also share a core meanings; according to this argument, the word up has the same central meaning whether it is used as a preposition, particle or an adverb. Emonds explicitly states that “when such a word is used as a directional adverb, it has the same intrinsic meaning whether or not it has an object” (1985: 253).

Lastly, Jackendoff and Emonds argue that there is a similarity in the distribution of the types of structures in which these elements can be involved. Three structures are
offered as specific examples: locative inversion, directional *with* sentences, and *right* modification. Each of these three constructions are argued to be unique to prepositions, and as they can also occur with adverbs and particles, they show strong evidence for a collapse of these three elements into a single category. Each of these constructions will be considered more fully in the discussion in Section 3.

### 2.2 Simplifying the analysis

The second main argument used to justify a collapse of adverbs, particles and prepositions into a single category is that this will lead to a simpler analysis of verbs like *put*, *sneak*, *glance*, and *dart* which can take either a prepositional phrase (PP) or adverb phrase (AdvP) as a complement. In essence, the broadening of the category Preposition to include adverbs and particles would simplify the subcategorization requirements of these verbs: rather than needing to subcategorize for a PP and/or an AdvP, they would only subcategorize for a PP. The verb *put*, for example, could fulfill its subcategorization requirements with either a preposition (*I put the book on the shelf*), or with an adverb (*I put the book back/away*).

Lastly, they argue that the collapse of these three elements into a single class of words would help to reduce the inventory of categories.

### 3 Discussion

Each of the approaches to defining the category of preposition has arguments in its favor. The distributional patterns of prepositions, adverbs and particles are clear in differentiating the three elements from each other. In these patterns, adverbs and
particles share some similarities that distinguish them from prepositions, and yet there are further tests that yield clear differences between particles and adverbs as well.

The obvious overlap of these elements cannot be ignored; they must be related at some level of analysis. However, the argument that these elements must be the ‘same’ category on the basis of their overlap may be overstated. Superficially, it does seem that all three elements overlap phonologically, semantically and syntactically, but a closer examination of the facts shows a more complicated view.

3.1 Phonological overlap

It seems clear that some particles and adverbs are homophonous with prepositions. But are all particles and adverbs homophonous with prepositions? Or are there particles or adverbs that are not used as prepositions?

In English, at least, nearly all particles are homophonous with prepositions; the most commonly used particles, *up, out, on, off, in,* and *down* (Dixon 1982), can all be used as prepositions. However, most of these words tend to be used much more frequently as adverbs, rather than as prepositions. Except for *on* and *in,* where prepositional use outstrips adverbial use, the uses of *off, down, out,* and *up* are overwhelmingly adverbial. Results from searches in the British National Corpus (1994) indicate the preference for the use of each term (note that these numbers must be taken to include a number of particle uses as well, since the British National Corpus (BNC) code is called ‘adverb particle’ and is used for ‘prepositional adverbs’): *off* (37,751
adverb uses, 8,060 preposition uses) was used as an adverb 82.4% of the time, *down* (72,709 adverbs, 5,182 prepositions) was used 93.3%, *out* (145,706 adverbs, 607 prepositions) was used 99.6% and *up* (158,064 adverbs, 3,424 prepositions) was used 97.9% of the time. In contrast, *on* (54,956 adverbs, 578,274 prepositions) was used as a preposition 91.3% of the time, and *in* (34,411 adverbs, 1,691,158 prepositions) was used prepositionally 98.0% of the time.

While particles seem to completely overlap with prepositions, there are adverbs that are never used as prepositions. Adverbs such as *away, back,* and *together* are listed in the *Oxford English Dictionary Online* (2005) as adverbs, not prepositions, and a BNC search for these terms yielded no prepositional uses. Additionally, these adverbs are not ‘abnormal’ adverbs: they show the same syntactic patterns as the adverbs discussed above, as seen in (16).

(16) I passed (back) the homework (back).  
    She threw (together) the pasta dinner (together) in no time.  
    He pushed (away) the plate (away).

Another interesting point to note about adverbs is that they seem to overlap heavily with other parts of speech as well. Out of a list of 43 adverbs (drawn from Hill 1968), we see that many can be used in other syntactic ways: as seen in Table (2.1), many of these adverbs can be used as nouns and adjectives, and a few can even be used as verbs.

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2 This also seems to be true in other Germanic languages, such as Dutch and German.
Because English readily accepts functional shift from one category to another, we should be wary of any argument that builds a category on phonological overlap alone. While it is quite clear that there is a very high level of phonological overlap between particles, adverbs and prepositions, it is also clear that this overlap is not complete.

### 3.2 Semantic overlap

The observation that prepositions, adverbs and particles have overlapping meanings also has a common-sense level of validity, but like the idea of phonological overlap, it is too simplistic. While their core meanings are related to each other, they relate to different things in the sentence. In a sense, it is like love as a verb and a noun. It stems from the same historical root, and both words have at their core a sense of ‘devotion,’ but both give different information to the sentence: one is a predicate and one
is a nominal. A parallel argument can be made for prepositions, particles and adverbs: they stem from the same historic root, and have at their core the same meaning, but they offer different types of information to the sentence: prepositions relate one thing to another, adverbs modify, and particles add telicity or an idiomatic sense to the verb.

3.3 **Syntactic overlap**

Three constructions are at the heart of the argument that particles, adverbs and prepositions are the same syntactically in Jackendoff’s and Emonds’ work: locative inversion, directional + *with* sentences, and *right* modification. Each of these will be discussed in turn.

3.3.1 **Locative inversion**

In locative inversion structures, the inversion of an intransitive verb and its (non-pronominal) subject occur when a locative or directional PP is preposed. (Note that there is no pause after the preposed element, as there would be in other fronting constructions.) Emonds and Jackendoff both conclude that the “rule forming this construction will be simplified if it has to refer only to the category ‘PP’…rather than to three independent categories” (Jackendoff 1973: 347). However, there are several problems with this conclusion.

First, the supporting data that they offer (both have nearly identical sets of example sentences) are not accurately labeled: based on the distributional tests discussed earlier, the examples they offer as particles should all be classified as adverbs (17).

(17) | In he ran! |
---|---
| Down rolled the carriage! |
| Out jumped the cat! | [(20) in Emonds]
Up she climbed!
Off came Harpo’s fake beard.  [(5b) in Jackendoff]
Away flew the remnants of your tattered hat.
On trundled the weary heroes.

This mislabeling leads both Emonds and Jackendoff to conclude that some, but not all particles can take part in this construction (a problem which both researchers try to deal with in different ways). This apparent irregularity of the pattern is resolved when the adverbs and particles are accurately classified: no particles can take part in this construction, only adverbs and prepositions can. Clearly, adverbs, prepositions and particles cannot be taken as a single category based on their distribution in the inverted locative construction.

3.3.2 Directional + with sentences

Another piece of evidence offered by Emonds and Jackendoff in support of collapse the three categories into one is their parallel patterning in constructions where a prepositional phrase headed by with follows a directional phrase. Again, there are problems with the generalization of the prepositional elements: examples from Jackendoff are used to illustrate prepositions (18), adverbs (19), and particles (20), while the examples in (18) are taken by Emonds to be adverbs, not prepositions.

(18) Into the dungeon with the traitors!
    Down the well with your money!

(19) Outdoors with these noisy machines!
    Upstairs with these noisy machines!

(20) Off with his nose!
    Away with the evidence!
The structures in (18) seem best analyzed as containing prepositions (not adverbs), in light of the fact that when paraphrased as closely as possible, they turn out to be prepositional phrases (21).

(21) 

Put/throw that traitor into the dungeon!  
Take those sandbags to the river!  
Take it out the door!  
Take this assignment to hell!

Additionally, there doesn’t seem to be any imaginable context where object shift could apply; if these really were adverbs, the DP object should be able to occur on either side of the prepositional element. This is clearly not possible (22); these structures must be taken to contain prepositions, not adverbs.

(22) 

(Put/throw that traitor) *the dungeon into  
(Take those sandbags) *the river to  
(Take it) *the door out  
(Take this assignment) *hell to

Another problem is that the ‘particles’ in (20) are actually adverbs. In fact, when paraphrasing a sentence like *Away with the evidence!, it is impossible to get a particle reading. The most plausible meaning must be a predicative, directional one like ‘cause it to be away’; it is impossible to get a particle reading like *Throw it away! ‘discard it, where a particular verb is required to create a non-compositional meaning. Because all particles have such a close relationship with their verbs, they cannot occur in directional + *with structure. In (23) the particle interpretations of these structures are impossible (intended particle reading given in parentheses).

(23) 

*Up with the information!  
*Up with your dog!  
*Out with the sansei!

(Look up the information!)  
(Tie up your dog!)  
(Knock out the sansei!)
*Over with the government! (Take over the government!)

It seems clear that prepositions, adverbs and particles, when correctly identified, do not pattern identically in directional + *with* sentences.

### 3.3.3 right modification

Jackendoff also gives as evidence of a single unified category the use of the modifier *right*, which can modify prepositions, adverbs and particles, as seen in (24), but not true adjectives or adverbs, as seen in (25).³

(24)  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| a | The cat sat (right) on the bed.  
The dog ran (right) into the child.  
I hit the man (right) under the chin! |
| b | She sat (right) down.  
John came (right) in.  
John brought the bottle (right) up. |
| c | He threw (?right) up.  
Sam was really drunk last night and threw (right) up all over me.  
They looked it (right) up and left. |

(25)  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| a | He wore a (*right) green shirt.  
That is a (*right) big book.  
She spoke (?right) slowly.  
They ran the marathon (*right) quickly. |

These examples suggest that a parallel structure is shared by these three elements that is not shared with other categories⁴ such as true adverbs and adjectives. van Riemsdijk (1978) further argues that *right* is in the Spec position in each of these cases.

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³ However, the structures in (28) are allowed in some dialects.
⁴ However, right modification is also allowed with subordinating conjunctions of space and time. There are also some idiomatic uses of particles where right modification is not allowed, but the same is true with prepositions. This is discussed further in Chapter 4.
Interestingly, van Riemsdijk notes that when right modifies particles (26) and adverbs (27), the DP object must precede the prepositional element.

(26)  
a  She looked the information (right) up.  
   *She looked (right) up the information.  

b  He ate the apple (right) up.  
   *He ate (right) up the apple.

(27)  
a  The man brought the armchair (right) in.  
   *The man brought (right) in the armchair.  

b  The little girl peeled the skin (right) off.  
   *The little girl peeled (right) off the skin.

Prepositions always precede their object, so there is no question of where they are placed with right modification. Again, we see that all three elements seem to allow for right modification, but particles and adverbs pattern differently from prepositions in their placement in the structure.

3.4 Conclusions

In conclusion, we see that these three elements are syntactically different and yet share some similar characteristics. They have different patterns of distribution in general, and they show differences in constructions with locative inversion and directional + with constructions (where adverbs and prepositions pattern similarly, but particles do not). They all seem to allow right modification (with a few exceptions), which is often cited as a property that is unique to prepositional elements, and there are similarities in their phonological and semantic makeup (although we must be careful not to simplify these characteristics too much). In essence, there is something fundamentally sound about both views: these three elements appear to be both
simultaneously alike and different. But these two views seem diametrically opposed to
one another: one has at its core the differences between the three elements, and the other
the similarities. How can these two opposing views be reconciled?

The answer in current views of categories in generative grammar is that they
really cannot; the three elements must be collapsed into a single category, or three
different (or possibly two different) categories must be established. However, turning to
a newly introduced idea in the theory of categories—semi-lexical categories (Corver and
van Riemsdijk 2001)—another possibility emerges, one that allows these three elements
to be considered from a different vantage point which allows for both the differences and
the similarities to emerge from a single, but complex category. Before turning to the
solution, however, let us investigate the second key problem with the category
preposition.

4 The lexical-functional divide

A second area where prepositions represent a problematic category lies in the
nature of the category: do prepositions represent a lexical category or a functional one?
This is an important question, as the distinction between lexical and functional categories
plays a central role in theories of syntax. In fact, the differences between these two
categories seem to be growing in importance as theories of generative grammar
(Principles and Parameters, Government and Binding, and most recently Minimalism)
develop. The idea that the functional element Infl(ection) heads the sentence (Huang
1982, Stowell 1981, Pesetsky 1982, Chomsky 1986) eventually led to a parallel re-
analysis of Noun Phrases (NPs) as Determiner Phrases (DPs) (Abney 1987). Since
Pollock’s (1989) Split-Infl hypothesis, the questions about functional categories have focused on the nature of the structure of functional projections, rather than the fact of their existence (cf. Belletti 1994) for a good description of the development of agreement projections in Generative Grammar). It is unclear where prepositions stand with regard to this lexical-functional divide. Prepositions have generally been treated as a single category in linguistic theories (cf. Rauh 1993 for a review), and since Jackendoff (1973), it has been generally accepted that they belong to one of the four major lexical categories, along with nouns, verbs, and adjectives. However, there are problems with a unified approach to prepositions. I open the discussion with a brief review of the central qualities that distinguish lexical and functional categories. Then I turn to a discussion of how prepositions, as a category, do not clearly fall into one of these two divisions.

4.1 Lexical and functional categories

It has long been recognized that there are differences in the types of words and morphemes in any given language: some play a role in determining the referential meaning of a sentence, and other play a more grammatical role. The content words, also called substantive or (as adopted here) lexical categories, contrast with the grammatical, or functional, words in a number of ways.

Perhaps the most often cited difference between lexical and functional categories is in their semantic content. Lexical items are seen as contributing referential content, and as such “carry the principal meaning of the sentence” (Corver and van Riemsdijk 2001: 1): they contribute information about the events (Verbs), things (Nouns), attributes (Adjectives and traditional, non-prepositional Adverbs), and locations or
paths (Prepositions).\(^5\) In contrast, the functional elements contribute a more abstract, non-conceptual content that relates information about tense, aspect, mood, number, gender, definiteness, and agreement, to name a few. A rather simple example of the different levels of content between lexical and functional words may be illustrative. If a speaker omits (or wrongly substitutes) the functional elements (as in ‘Yesterday, I walk _ my two dog_’ or ‘Yesterday, I will walk my two dog’), the end result is ungrammatical, but the listener will still (generally) be able to construct the intended meaning. If, however, the content words are omitted (or wrongly substituted), the meaning is obscured, even if the functional elements are appropriately used (as in ‘Yesterday, I __ my two __’, ‘Yesterday, I sat my two cat’, or ‘Yesterday I __ed my two __s’). Clearly, the lexical items are central to providing the descriptive content, while the functional items contribute additional, non-referential content. I will use the term ‘referential content’ to refer to this distinction: lexical elements contribute referential content, while functional items do not (they do contribute information, but it is not referential).

A second quality that is often called upon to distinguish lexical from functional categories is whether the category has an open or closed membership. Lexical categories are ‘open’ in that they allow new members to be freely added to the category. Functional categories, on the other hand, have a closed membership, and new elements

\(^5\) It must be recognized that while this feature is widely cited in the literature, it remains a rather intuitive and vague notion. We have a feeling for the differences between these levels of meaning, there is, as yet, no explicit way to measure these differences.
cannot be added. The corollary of this open-closed distinction is the observation that open classes of words have a larger membership than closed classes. Thus lexical categories like Noun and Verb have unlimited membership, while functional ones like tense and number have a small, discrete membership.

There are also a number of syntactic differences that have been raised in the literature that point toward distinctions between lexical and functional categories. Note, however, that none of them can be reliably applied as diagnostics for differentiating lexical from functional categories. While nothing conclusive can be drawn from these generalizations, these characteristics are frequently offered as evidence for dividing lexical and functional categories. Thus no claims are made with regard to the reliability of these tests, and this review is simply offered to illustrate the current (rather shaky) understanding of what the categories ‘lexical’ and ‘functional’ refer to.

One observation is based on combinatorial restrictions of elements. Functional elements seem to be very limited in what they can occur with, while lexical elements seem to have more flexibility (Emonds 1985). For example, functional elements like determiners must occur with nouns; they cannot combine with verbs or prepositions. Similarly, inflectional information like tense, aspect, mood must occur with verbs, not nouns and adjectives. Lexical elements, on the other hand, seem to have more flexibility in occurring with different classes of elements. For example, a verb such as ask can take a variety of complement types: DP (I asked a question), IP (I asked my students to be on time), or CP (I asked if Hope was available).
Parallel to this is the observation that lexical elements can assign theta roles to their arguments while functional elements cannot (Ouhalla 1991, Chomsky with Lasnik 1995). Verbs such as *hit*, nouns such as *student*, and adjectives such as *envious* all assign theta-roles to their complements. Functional elements such as determiners and inflection do not have any theta-role to assign.

There are also movement differences that may help distinguish lexical and functional elements. The complement of a functional head often cannot be moved away from the functional head (Corver and van Riemsdijk 2001), while complements of lexical heads generally can be moved away. Take for example, a verb like *believe* with a CP complement: the complement of the lexical element (the verb) can be fronted, but the complement of C cannot (28). Similarly, the impossibility of fronting the complement of the determiner contrasts with the possibility of fronting the complement of the Noun (29), although it must be noted that nominal complements are much more restricted in allowing this type of movement than verbal ones. (Examples modified from Corver and van Riemsdijk 2001: 2-3)

(28)  a  [CP That [IP you are crazy about chocolate]]i, I believe ti.
     b  *[IP You are crazy about chocolate]i, I believe [CP that ti].

(29)  a  [Of whom]i did you see [several pictures ti]?
     b  *[dog], I love the ti.

It has also been suggested that morpho-phonological features may help distinguish lexical from functional elements. In these characterizations, functional elements are taken to be more dependant than lexical elements. Functional items are typically affixes or clitics, and can even be phonologically null; even when they are free
morphemes, they are often unstressed in normal, non-contrastive speech. Lexical items, on the other hand, are more likely to be free morphemes.

An overview of the features that are often called on to distinguish lexical from functional categories is found in Table (2.2).

<table>
<thead>
<tr>
<th>Lexical categories</th>
<th>Functional categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains semantic content</td>
<td>Lacks ‘heavy’ semantic content</td>
</tr>
<tr>
<td>Open class</td>
<td>Closed class</td>
</tr>
<tr>
<td>Unlimited membership</td>
<td>Limited membership</td>
</tr>
<tr>
<td>Free coining of new items</td>
<td>No coining possible</td>
</tr>
<tr>
<td>Variety of complement-types</td>
<td>Constrained complement-types</td>
</tr>
<tr>
<td>Can assign theta-roles</td>
<td>Can’t assign theta-roles</td>
</tr>
<tr>
<td>Can be separated from complement</td>
<td>Can’t be separated from complement</td>
</tr>
<tr>
<td>Morphophonologically independant</td>
<td>Morphophonologically dependant</td>
</tr>
</tbody>
</table>

Table (2.2): Characteristics of lexical and functional categories

However, several things must be kept in mind regarding this list of features. First, these features cannot be taken as conclusive descriptors of lexical or functional categories. Many of these features really define the two ends of a continuum, rather than a discrete characteristic. Whether something has descriptive content seems to be a question of degree. Similarly, morpho-phonological dependence is a question of degree. Thus so far, the determination of a category as lexical or functional must rely on a number of these features, and the degree to which each feature is fulfilled, rather than any one clear diagnostic. Lastly, and most important to the work at hand, while these features seem to delineate a distinction between lexical and functional elements, there are categories
that do not neatly fall under either label, such as Prepositions, as they are traditionally viewed.

4.2 Prepositions: lexical or functional?

Since Jackendoff (1973), prepositions have been generally accepted as one of the four main lexical categories, along with nouns, verbs, and adjectives. Some fields (such as aphasia research) have deviated from this position and assume that all prepositions are functional elements. However, either stance is difficult to maintain; prepositions seem to exist in the netherworld lying between the lexical and functional realms. In the following discussion, I outline the reasons that the category Preposition is problematic.

First, prepositions seem to be a lexical category in a number of ways. They typically contribute substantive, descriptive content, and are similar to verbs in designating relationships between things. Spatial prepositions like in, on, under, between, and next to provide the relation between two or more objects. Temporal prepositions such as before, after, and since, show how events relate to one another, and other prepositions such as with and for provide similar information regarding other (physical or psychological) relations. From this standpoint alone, prepositions appear to be appropriately classified as a lexical category.

Some prepositions allow for a variety of complement types. Prepositions like from and near can take a DP (30a) or a PP (30b) complement.

(30) a Figaro ran from \([\text{DP the dog}]\).

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6 Another possible explanation is that the lexical/functional classification itself is on the wrong track.
They live near [DP us].

b Figaro ran from [PP under the table].
They live near [PP to the beach].

Other possible complement types for prepositions depend on the analysis one gives to conjunctive clauses and gerundive phrases. If conjunctions like before and after are taken to be prepositions (He fell before the race began), the CP complements are also possible, and if gerundive phrases are taken as some sort of predicate structure (He fell before starting the race/I thanked her for helping me/I can’t think with the dog barking), then VPs are also possible. (I leave these questions to future investigation.)

Prepositions also assign theta-roles. In fact, prepositions seem to assign the majority of theta-roles that are required by sentential adjuncts: locative, goal, source, path, benefactive, and instrument are all assigned by prepositions to their complements.

Additionally, prepositions exhibit the lexical characteristic of allowing their complements to move away from the head. Examples of movement include wh-movement (What did the dog run under?), cleft constructions (It was the table that the dog ran under) and pseudo-clefts (The table is what the dog ran under).

Lastly, prepositions as a category do not have the same sort of morphophonological dependence that is characteristic of the functional categories. Typical prepositions like in, on, with, to, and from are not stressless elements, and they do not behave as affixes or clitics.

While all of these characteristics point to the lexical nature of the category, the status of prepositions remains problematic because not all prepositions pattern similarly
with regard to these features. Some prepositions (of, in particular) do not seem to have the substantive, descriptive content associated with the lexical categories. The more abstract nature of of and its role as an empty case-assigner point to its role as a functional, not lexical, element. Similarly, of is not taken to be a thematic-role assigner; it is used in constructions where a head (generally a noun or adjective) cannot assign Case to its complement. But in any case, the head assigns the theta-role to the complement, not the element of, as seen in the oft-cited phrases destruction of the city, envious of Figaro, and the book of John's. Lastly, of does not seem to fit the general morpho-phonological pattern of most prepositions. It does seem to be very phonologically light, and is often used in a reduced form (piece uh cake, a cup uh coffee, fond uh kids, the city uh Boston, and so on). In short, not all prepositions have the qualities that would characterize them as lexical.

Furthermore, there is one remaining characteristic where prepositions differ from the other three major lexical categories: prepositions are a closed class of words, while nouns, verbs, and adjectives all clearly constitute open classes. Traditional grammars offer a range of 50 to 60 English prepositions (Warriner and Griffith 1977, Pollock, Sheridan et.al. 1961), but in a corpus study of prepositions, Fang (2002) found more than 200 prepositions. While the number of prepositions may be larger than is generally thought, it is still very small when compared to the limitless numbers of nouns, verbs,
and adjectives. Additionally, there is evidence that new prepositions are added to the category over time, albeit at a very slow rate (Kortmann and König 1992, Vincent 1999). However, while the addition of ‘new’ prepositions is not comparable to the easy coining of new verbs, nouns and adjectives that occurs, the ‘new’ prepositions that enter do all seem to be of the lexical type. With regard to openness of class, prepositions must be categorized with the other functional classes, and not the lexical ones.

Clearly, the evidence is conflicting: prepositions, if taken as a single, monolithic category, seem to have characteristics that indicate that they are both lexical and functional at the same time. In the next section, I turn to a discussion of recent attempts to resolve this conflict by suggesting a division of the category into two or more types.

4.3 Current approaches

Several proposals in the literature have been advanced to resolve the lexical and functional difficulties with this category by positing the existence of two (or more) types of preposition. In this section, these proposals are briefly reviewed with three goals in mind: first, to provide the reader with an overview of the literature; second, to emphasize the fact that none of these proposals deal with both problems (they all overlook the adverbs and particles in their analyses); third, to highlight some of the characteristics that have been used to distinguish one prepositional class from another.

Rauh (1993) divides prepositions into two broad categories: lexical and non-lexical, with non-lexical prepositions being further divided into fixed-phrase prepositions

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7 One possible explanation could be that there are a finite number of relations that can be expressed.
and Case prepositions. In Rauh’s view lexical prepositions (all spatial, temporal, and some causal prepositions) are distinguished from the non-lexical ones on the basis of eight properties. These range from Case assignment, which is problematic because it must, by definition, apply to both lexical and Case prepositions in her account, to “category-specific” properties like movement operations that, again, by definition, must apply to the class of prepositions, and not just the lexical ones. The fixed-phrase prepositions (also referred to as ‘adjectivizing’ or ‘adverbializing’ prepositions) are taken to form a single syntactic unit with their noun phrase (like on the run, and out of shape), and create a new category ‘X’. Rauh claims that these prepositions are not lexical because they cannot be coordinated with lexical prepositions, but can coordinate with adjectival or adverbial phrases (Bill is fat and out of shape/ Bill is at the gym and out of shape), and they can be used to modify nouns (He is an out of shape runner/*He is an at the gym runner). Rauh argues that these fixed-phrase prepositional phrases will eventually result in a single phonological word, which is no longer a prepositional phrase, but something that is adjectival or adverbial in nature. It is unclear when a prepositional phrase turns from being lexical to being a fixed phrase: are all metaphoric uses of prepositions to be taken as fixed phrases, and only literal uses to be taken as lexical prepositions? This threshold is never discussed, and is problematic. Lastly, the Case prepositions assign Case but no theta-role to their complement; the head that they occur with subcategorizes for and assigns the theta-role to the complement. Rauh does mentions of as an example, but states that all spatial prepositions can occur as Case prepositions, if a lexical head subcategorizes for the specific preposition (like believe in).
Importantly, there is no discussion of adverbs or particles, and some of her examples (*he rushed in*, p. 103) contain adverbs, although they are treated as prepositions. However, it is important that Rauh uses “lack of semantic content” (1993: 1) as a criterion to distinguish the types of prepositions, with the more explicit property of theta-role assignment.

Tremblay (1996) divides prepositions into lexical prepositions, which have semantic content, and non-lexical ones, which are semantically vacuous and “have no semantic content” (p. 79). Tremblay differentiates the two categories on semantic grounds: lexical prepositions (like *dans* ‘in’ and *sur* ‘on’ in French) can assign theta-roles, while the semantically vacuous prepositions (like *avec* ‘with’) cannot. There are two main reasons for suggesting that *avec* is vacuous. First, it is claimed that *avec* is parallel to the copula (31b) and Dummy Case assigners like the dative à ‘to’ (31c) in having “no semantic contribution” because more or less parallel sentences can be composed:

(31)  
\[ \begin{align*}
\text{a) la fille avec les cheveux longs} & \quad \text{the girl with the hair long} \\
\text{b) la fille qui avait les cheveux longs} & \quad \text{the girl who had the hair long} \\
\text{c) la fille aux cheveux longs} & \quad \text{the girl DAT-the hair long}
\end{align*} \]

This seems problematic, because these sentences do seem to have different meanings.

Secondly, Tremblay claims that no matter what theta-role seems to be assigned by the preposition *avec*, the theta-role is actually assigned by the verb and phrasal
context, rather than by the preposition itself. However, this seems to ignore the availability of *avec*-phrases as pure adjuncts that must contribute a theta-role to their complement. Tremblay further claims that Dummy Case assigners (like dative à ‘to’ and genitive de ‘of’) are not prepositions at all, but are members of the functional category K (Case). This is argued on two grounds: 1) Dummy Case assigners are inserted into structures to prevent Case Filter violations while *avec* is not required by another element in the sentence, but is an adjunct; 2) *avec* establishes a relation between elements (by virtue of the fact that it is a preposition, and thus relational), while Dummy Case assigners do not.

There seem to be a number of circular arguments made in this paper, and it is not at all clear that we should accept the claim that the preposition *avec* contributes nothing to the semantics of a phrase. As in Rauh’s examination of prepositions, no attempt is made to integrate adverbs and particles, although this is understandable because Tremblay is focusing on one particular preposition throughout her analysis.

Cadiot (1997) explores the nature of prepositions by bringing together various observations of grammarians, and trying to systematically describe the category of prepositions. Cadiot proposes three classes of prepositions: 1) colorless prepositions, 2) colorful, and 3) mixed. Colorless prepositions are characterized as lacking meaning (‘vides de sens’), abstract, ‘weak’, and syntactic-semantic (examples would be the French prepositions de ‘of’, à ‘to’, and en ‘in’). On the other extreme of the continuum, the colorful prepositions are seen as being full of meaning, ‘strong’, and ‘auto-semantic’, and are most often spatial in meaning (examples would be contre ‘against’, *parmi*...
‘among’, vers ‘toward’). The intermediate ‘mixed’ class is characterized as those prepositions having both a concrete spatial meaning along with meanings extending to other domains (such as par ‘by’, pour ‘for’, and avec ‘with’).

Given these three types of prepositions, Cadiot offers fourteen observations that could be used to categorize prepositions; most of them focus on isolating the two extremes of the continuum. For example, the first observation is that the more abstract the meaning of the preposition, the more colorless it is, and the more spatial or temporal the meaning of the preposition is, the more colorful it is. The remaining observations touch on valency, morphological ‘strength’, possible constraints on the use of modifiers in a PP, realization of government, and so on. The underlying theme is that colorless prepositions are more abstract, whereas the colorful ones are more concrete. However, most, if not all, of the observations are too vague to be useful as a set of definitional criteria; Cadiot is aware of this, and he notes in closing that these can only be taken as relative and somewhat vague generalizations and not exact differences.

Leonard (1997) differs from the previously discussed approaches by taking as a starting point the observation that while it is common to describe function words as lacking meaning, they do, in fact, add some level of content to the sentence. Despite this initial acknowledgement, the ‘lack’ of semantic content is taken to be key in distinguishing two types of prepositions: content-full prepositions (‘strong’ prepositions in his terminology) and those with no apparent content (called ‘weak’ prepositions). Three main pieces of evidence are claimed to support this division. First, weak prepositions occur in constructions that have parallel, non-prepositional alternates.
and do not seem to contribute semantic content (*the episode of 24 last week* / *the 24 episode last week*), while strong prepositions do not have such alternates because they contribute to the semantic content (*the children in the sandbox*/*the sandbox children* refer to different entities). Second, weak prepositions allow for a wider range of internal and external arguments than strong prepositions do because weak prepositions do not show a relation between two elements (*the noun subcategorizes for the complement, as in destruction of the city*) while strong prepositions are quite relational. Third, they differ in their ability to take part in movement: weak prepositions cannot take part in stranding or pied-piping, while strong prepositions can. These last two characterizations seem especially problematic. It doesn’t seem clear that weak prepositions have a wider range of internal and external arguments. In fact, in Chapter 4 I will argue that the opposite is true: the prepositions that Leonard considers weak are more limited than strong ones. Moreover, his characterization of the movement facts seem overstated: while in some cases weak prepositions can enter into these operations, their distribution seems quite limited when compared to the strong prepositions.

Using van Riemsdijk’s (1990) work showing that prepositions have extended projections parallel to VP/IP and NP/DP as a springboard, Rooryck (1996) elaborates a Minimalist account of prepositions, and uses data from English, German, Dutch, and French to show that the structural Case of PPs is assigned within a functional projection via Spec-Head agreement. While the main point of the article is to lay out the details of what the fully projected structure of a PP would look like, I will only outline the aspects that are directly relevant to the topic at hand: how the category as a whole is defined.
Rooryck’s article explicitly draws a distinction between two types of preposition: true prepositions and elements that are “very close to being pure Case markers” (p. 226). In support of this division, he points to the distribution of the modifiers *right* and *straight*, which can occur with true prepositions, but not with the Case markers *of* and dative *to*. However, it must be noted that not all ‘true’ prepositions can be modified by *right*: *with, by, about, among and between* are among the exceptions, as seen in (32).\(^8\)

(32)  
*I cut the bread right with a knife.*  
*The dog was kicked right by his owner.*  
*He left the house right by noon.*  
*(but note: I ran right by the train)*  
*He spoke right about his past.*  
*The cabin is hidden right among the trees.*  
*They are keeping a secret right between them.*

However, the main feature that is claimed to set true prepositions apart from the Case markers is their theta-marking properties: true prepositions are connected to specific theta-roles, while Case markers are not. For example, *with* assigns a comitative or instrument role to its internal argument, while *of* occurs with a variety of roles because it is the head noun that selects the complement, not the element *of*.

\(^8\) A possible explanation for when *right* modification is allowed is presented in Chapter 4.
Given the separation of Case markers from prepositions, Rooryck takes Case markers to be the heads of the functional projection of PP, and he turns to investigate the possible structure of the PP projection, and argues in favor of a right-branching structure.

The hypothesis that the prepositional phrase is extended, or split between lexical and functional projections must be correct, especially if prepositions are a lexical category on par with the other major lexical categories. However, much of Rooryck’s evidence for the analysis of English is drawn from structures that are essentially drawn verbatim from Jackendoff (1973) with no consideration of whether the prepositional element is actually a preposition or not. Thus we see sentences like Chico went right up/down, Harpo fell down from the top, and Zeppo went up to the attic, where up and down are acting as adverbs, not as prepositions.

5. Discussion

While these approaches to the category of preposition differ in their goals and their analyses, they all point to one conclusion: prepositions should not be taken as a single, homogeneous category, but a complex and multi-layered one. It is clear that a distinction must be made between at least two types of preposition: lexical prepositions and functional ones. One feature seems to underlie all attempts to distinguish lexical from functional prepositions: the level of semantic content. Lexical prepositions are characterized by strong semantic content (as evidenced through theta-role assignment) while functional prepositions are said to have little or no semantic content (as evidenced by their inability to assign theta-roles). Without exception, of is argued to be functional
(or a pure Dummy-Case assigner, in the case of Tremblay (1993)), and some also include the dative *to*. The majority of transitive prepositions are taken as lexical (although this is never explicitly stated--it is implied).

However, many of these proposals have problematic aspects, and none resolve both of the fundamental issues that trouble the category Preposition. Our interpretation and understanding of the category should be able to show how adverbs, particles and prepositions are simultaneously different and yet related to each other, and it should allow for a layered approach, where some prepositions are lexical and others are functional. While all of these studies propose solutions to the second problem, none of them address the first.

In the following chapter, I turn to a discussion of a new approach to lexical and functional categories: one that posits the existence of semi-lexical categories (Corver and van Riemsdijk 2001). As its name implies, this approach claims that there are elements that fall somewhere in between the purely lexical and purely functional domains. In the next chapter, the evidence for semi-lexical categories will be discussed, and a specific method of applying the notion of semi-lexical categories will be presented. This method offers a more detailed view of lexical categories and provides a solution to the two core problems plaguing prepositions. By allowing for a fully complex category, one that has lexical and functional elements as well as semi-lexical elements, the inclusion of multiple types of prepositions in a single category can be maintained on a theoretical level.